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ABSTRACT

Arguing that research, development, and dissemination are the least expensive, least threatening, and most needed forms of assistance that the Federal Government can provide to educators working toward the National Education Goals, this committee report presents 21 recommendations designed to enable the Office of Educational Research and Improvement (OERI) to play a leading role in the development of a national education reform strategy. It is noted that this report has been developed as the first step in the process of preparing legislation for the reauthorization of OERI. Background information provided by a foreword by Major R. Owens, chairman of the subcommittee, and an introduction, is followed by a list of the recommendations; detailed discussions of each of the recommendations; and a summary of related hearing testimony from July 30, 1987, through April 25, 1991, including a list of all witnesses. Two papers and a table displaying the research databases of selected Federal agencies are appended. In the first paper, "Responding to Children at Risk: A Guide to Recent Reports," Susan Austin and Gail Meister provide summaries of recommendations for the early and middle learning years and the high school years, followed by abstracts of 27 reports. In the second paper, "Tilling Fertile Soil: How Education Dissemination Can Benefit from Experiences of the U.S. Department of Agriculture," Susan Shurberg Klein presents and discusses 12 principles that have worked well in agricultural dissemination and suggests implications for their replication by OERI for education dissemination. The latter paper lists 25 references. (DB)

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[COMMITTEE PRINT]

EDUCATION 2000: THE ROLE OF RESEARCH AND DEVELOPMENT IN AN OVERWHELMING CAMPAIGN FOR EDUCATION IN AMERICA

PREPARED FOR THE

SUBCOMMITTEE ON SELECT EDUCATION

OF THE

COMMITTEE ON EDUCATION AND LABOR

HOUSE OF REPRESENTATIVES

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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AUGUST 1991

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Serial No. 102–M

Printed for the use of the Committee on Education and Labor
WILLIAM D. FORD, Chairman

IR 015 377

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CONTENTS

	Page
Letter of Transmittal	v
Preface	vii
Forword	ix
I. Introduction	1
II. Recommendations: Findings and Considerations	5
Recommendations	5
Findings and Considerations:	
1	9
2	13
3	17
4	21
5	25
6	31
7	37
8	43
9	47
10	51
11	55
12	59
13	65
14	71
15	77
16	85
17	93
18	101
19	107
20	113
21	117
III. Summary of Hearing Testimony	121
IV. Appendices	
A. "Responding to Children At Risk: A Guide to Recent Reports"	153
B. Research Databases of Selected Federal Agencies	251
C. "Tilling the Soil: How Education Dissemination Can Benefit from Experiences of the U.S. Department of Agriculture"	255

COMMITTEE ON EDUCATION AND LABOR
U.S. HOUSE OF REPRESENTATIVES
518 HOUSE ANNEX 1
WASHINGTON, DC 20515

SUBCOMMITTEE ON SELECT EDUCATION

August 8, 1991

The Honorable William D. Ford, Chairman
Committee on Education and Labor
2181 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Ford:

The Subcommittee on Select Education is pleased to submit Education 2005: The Role of Research and Development in an Overwhelming Campaign for Education in America. This report contains a practical set of recommendations to achieve the most effective utilization of the Office of Educational Research and Improvement (OERI). We contend that, in addition to carrying out its original mission to equalize educational opportunities, OERI, if properly utilized, would facilitate the development of an "American Solution" to improve our schools and our workforce, and to create a "learning society".

Research and development is only a small part of the overall long-term public policy and strategy needed to revamp our national education effort; however, it is a pivotal and critical component. Many other elements, especially the provision of emergency Federal financial relief to hard-pressed local schools, are of equal importance and must be pursued more vigorously by Congress. Just as "overwhelming force" was used to achieve victory in the Middle-East, we must mount an "overwhelming campaign" for educational improvement which sets in motion many strategies and models simultaneously. The coordinating entity at the center of this campaign must be OERI.

The recent launching of a private research and development corporation in no way diminishes the importance of OERI. At this crucial juncture, the Federal Government must not surrender the function of educational R&D to an "education/industrial" complex. The attention and power of the full Committee on Education and Labor will be needed to maintain and expand a research and development entity that belongs to the American people.

This report is the result of more than two years of work by the Subcommittee on Select Education. We have conducted numerous hearings and consultations. An attempt has been made to summarize the best available knowledge and wisdom on educational improvement efforts. We look forward to working with the full committee to incorporate this component into a broader master plan for future national education policy.

Sincerely yours,

MAJOR R. OWENS
Chairperson

PREFACE

More than two years ago, the Subcommittee on Select Education began the effort which has led to the completion of this report. As can readily be seen from the chronology of hearings, numerous witnesses contributed to this undertaking. Less formal individual and small group contributions have also added to the depth and sensitivity of these recommendations.

Far beyond the call of duty and the requirements of the ordinary job descriptions, the staff of the Subcommittee on Select Education has worked with diligence and dedication to produce this very practical and vital report. We greatly appreciate the contributions of Maria A. Cuprill, Wanser R. Green, Laurence Peters, Theda Zawaiza, Patricia Laird, and Maureen Crawford.

We also greatly appreciate the cooperation of the past and present members of the Subcommittee on Select Education who made it possible to conduct this unusual number of hearings. We are grateful to Steve Bartlett, the past ranking member of the subcommittee, the present ranking member, Cass Ballenger, and all of the other members of the subcommittee: Donald M. Payne, José E. Serrano, William J. Jefferson, Pat Williams, William D. Ford, Scott L. Klug, and William F. Goodling.

The report, *Education 2005: The Role of Research and Development in an Overwhelming Campaign for Educational Improvement in America*, has truly been a collective enterprise involving many persons concerned with the improvement of education in America. We sincerely thank all of those who have participated.

MAJOR R. OWENS
Chairman, Subcommittee on Select Education

FORWORD

Education 2005, is a practical set of recommendations to achieve the most effective utilization of the Office of Educational Research and Improvement. OERI is positioned to play a pivotal role in the transformation of American education. If properly utilized, OERI would facilitate the development of an "American solution" to educational improvement by the year 2005. We propose five years of wide-spread—even redundant—comprehensive experimentation; five years of intensive evaluation, modification and certification; and five years of maximizing dissemination, consolidation and institutionalization of "what works." A new era for American education would commence in the year *2005*.

To achieve significant, broad based, "critical mass" improvements in American education we must launch a campaign equivalent to fighting and winning a world war. Comparable to the strategy of an "overwhelming force" in a military campaign, we must mount an "overwhelming campaign" for educational improvement. Many strategies and models must be in motion and must be coordinated simultaneously in order to reform and transform education in our Nation.

Indeed, whether we acknowledge it or not, there is a war for world economic dominance already raging. And, the key weapon—the vital chip—in this war is the human component. Education is the process and the system we must use to construct, refine, maintain, and perfect this invaluable human component.

At every level, spread over the full range of commercial, military and social activity, competent human performance is essential. As competent and adequate performance moves toward excellence, the advantage shifts to the operation, enterprise, or nation which has the greatest amount of cumulative excellence in performance. Enhanced productivity is the result of this cumulative excellence.

Cumulative excellence means excellence in the boiler rooms, in the repair shops, and on the assembly line, as well as excellence in the fiscal departments, the executive suites, and the board rooms. Indeed, slovenliness in the boiler rooms and repair shops can generate a situation which makes decision-making in the executive suites and the board rooms irrelevant. Conversely, the best workers, mechanics, and professionals in the world can find their efforts rendered obsolete by incompetence at high levels.

The education and training system of any enterprise, corporation, or Nation bears the burden for establishing the comprehensive or cumulative competent human performance necessary for acceptable productivity. The education and training system must also be a dynamic one, continually pushing the cumulative human performance effort from competence toward execellence. Needless to say, an education and training system must begin its mission at whatever level it finds its human raw material. The state of pre-

competence—illiteracy, unskilled, over-specialization—represents the greatest challenge for an education and training system.

In America, the national education effort is a conglomerate one, made up of many systems. However, all of these diverse parts would benefit greatly from a more intensified and comprehensive national educational improvement strategy. The Federal Government must do what none of the parts alone is capable of accomplishing. The Federal Government must set forth a comprehensive research, development, and dissemination strategy for education in America and must accept the direct responsibility for financing and implementing those components which can only work by utilizing the capability of the Federal Government.

Although research and development is only one component of the much needed "overwhelming campaign" in the overall effort to reform and transform American education, it must be recognized as a critical component. Research and development has repeatedly emerged as a decisive factor in all of the modern human concerns from war and disease to agriculture and consumer comforts. The problem of the escalating per student cost of education will not be solved without the leadership of R&D. The inner-city fourth grade teacher, demoralized by discipline problems, can probably only be rescued by R&D initiatives. Front line classroom teachers will probably be the last converts to endorse the relevancy of R&D; however, the television- and Nintendo-oriented pupils facing these teachers are unknowingly demanding an update of teaching methods and techniques.

American Federation of Teachers President Albert Shanker repeatedly contends that traditional classroom lecturing has never reached more than 20 percent of the public school students. In a more complex society that can no longer absorb the 80 percent who do not benefit from the traditional public school process, the challenge of finding new ways to engage students and new ways to assist them in coping with their total environment can not be met without the intense involvement of research and development.

More than twenty specific recommendations are included in this final staff report. *Education 2005* could have offered many additional recommendations; however, process is the major concern of this effort—not specific proposals. The process is the prize. OERI must establish and continually refine a scientifically-based process for research and development. OERI must offer the best possible objective, professional support for the President, the Congress, the Governors, teachers, students, and the general public. All of these constituents must have good reason to trust the pronouncements and products of OERI.

The reward for an "overwhelming campaign" for educational improvement will be a unique "American solution" to the present day challenge of maintaining cumulative educational excellence. Our Nation is saturated with high technology including the world's best and most extensive communications technology. Our children are bombarded from many directions with facts and experiences which presently influence their education, which could, if better utilized, provide for an even greater enhancement of their learning rate and the quality of their cognitive development. We also enjoy the benefits of a diverse set of educational institutions and approaches to

learning. A systematic merging of our strengths, while retaining flexibility and creativity, will produce the "American solution" to the problem of producing and maintaining cumulative educational excellence.

The "American solution" for educational improvement can not be an imitation of the Japanese, the Soviet or the European school systems. The "American solution" will be the end results of our "overwhelming campaign" for educational improvement. National advocates for education reform must recognize the fact that the element of time can not be taken for granted. The momentum for cumulative excellence in competing nations is escalating. Many economic, industrial and scientific opportunities lost today will slam shut the doors to related opportunities tomorrow.

A timetable for research and development must serve as the gyroscope for the implementation of the "overwhelming campaign." There is a need for Federal legislation which sets forth a national commitment over an entire generation of the next thirty years. The absolute minimum timeframe must be fifteen years. Since universal improvement is needed in all kinds of educational efforts, we must begin with five years of widespread—even redundant—comprehensive experimentation. Demonstration projects which replicate promising programs and approaches that work must saturate this first phase. Five years of intense evaluation, modification and certification must follow as phase two. Maximum dissemination, consolidation and institutionalization of "what works" would conclude the fifteen years as the final phase three. The commencement of a new national educational effort based on the results of fifteen years of the development of the "American solution" would take place in the year 2005.

MAJOR R. OWENS
Chairman, Subcommittee on Select Education

I. INTRODUCTION

Sixteen years ago, the Congress established a distinct Federal office responsible for educational research and development, with the following mission statement:

> The Congress declares it to be the policy of the United States to provide to every individual an equal opportunity to receive an education of high quality regardless of race, color, religion, sex, age, handicap, national origin or social class. Although the American educational system has pursued this objective, it has not obtained this objective. Inequalities of opportunity to receive high quality education remain pronounced. To achieve the goal of quality education requires the continued pursuit of knowledge about education through research, improvement activities, data collection and information dissemination. While the direction of American education remains primarily the responsibility of State and local governments, the Federal Government has a clear responsibility to provide leadership in the conduct and support of scientific inquiry in the educational process.

Reclaiming this vision for federally-sponsored educational research and development for the 1990's and beyond is the focus of this report.

The House Subcommittee on Select Education has primary oversight responsibility for the Department of Education's Office of Educational Research and Improvement (OERI) as well as responsibility for authorizing any new legislation relating to that office. In 1991 the authorizing legislation, set forth in sections 405 and 406 of the General Education Provisions Act (GEPA), is due to expire. This report has been developed as the first step in the process of preparing legislation for the reauthorization of OERI.

In a Nation where education is primarily a State and local responsibility, it is imperative that the Federal Government be instructive and supportive in its role rather than commanding and controlling. The optimum role for the Federal Government is to do for the States and localities what they cannot do for themselves. Research, development, and dissemination are clearly functions which the States and localities cannot conduct effectively for themselves, and for which the Federal Government must bear prime responsibility. The nature of these functions is such that they are best carried out by means of an independent entity capable of gathering data from a variety of sources for the purpose of making comparisons. Meaningful research, development, and dissemination also require an investment above and beyond the ongoing operational activities and budgets of State and local education agencies.

The goal of the Federal research, development, and dissemination effort should be the establishment of a national treasure chest of research results, models, and materials to be conveniently placed at the disposal of the Nation's educational decision-makers. In order to accomplish this task, the Federal research, development, and dissemination function must have the highest degree of integrity and credibility. For good reason, education is a matter which arouses great emotions from many segments of the population. And

the national landscape is littered with experts who claim to know what and how children learn. Above the plethora of "mother-wit," common sense, ideological extremism, and psuedo-science there must be established some stable and amply illuminated beacon of light, fueled by the best available reason, science, and scholarship.

This national treasure chest must be made available, not only to Congress and the Federal executive branch, but to every decision-maker in America. They must be able to tap into a network which allows them to use this vital resource. As they strive to improve their systems, governors and State legislators, State commissioners, local school boards, superintendents, principals, teachers and parents should be able to confidently shop for ideas, models and materials. Of all the forms of assistance that the Federal Government could possibly provide, research, development and dissemination are the least expensive, the least threatening, and the most needed.

Just as research and development has so magnificently served American industry, it can also greatly improve American education. While it is possible to learn much that is useful from European and Japanese school systems, our Nation's unique problems demand a special American solution. Every eight seconds of the school day, an American student drops out. Every year, the U.S. school system graduates 7,000,000 young people who cannot read their diplomas. We face a crisis in American education, a crisis that will demand a new and more systematic commitment of resources and greater partnership between researchers and school-based practitioners.

Education research and development should play a vital role in providing the centrifugal force around which reform efforts must proceed. Meaningful school improvement cannot occur without an enhanced Federal capability to provide the Nation with reliable information and materials that are proven effective. The stakes now are far too high—in terms of the survival of our high-wage, technologically-based economy—for us to proceed on the road to educational reform without guideposts and clear maps. The era of non-systematic, hit and miss innovations that are seldom replicated must be ended; so too must the anti-intellectualism that has provided a nurturing environment for faddism, partisan interference, and ever-changing priorities.

The economic well-being of our society depends on the effective education of all of our citizens. Statistics such as the following indicate that there are serious failures in meeting the educational needs of millions of young Americans. Specifically:

- It is estimated by the Bureau of the Census that an average of 3,789 children drop out of school each day, or 682,000 a year. In urban centers the rate is much higher; up to half of all students entering ninth grade fail to graduate. The costs of dropping out are staggering, both for the individual and for the society generally. The Committee on Economic Development (CED) estimates that each year's class of dropouts will cost the Nation more than $240 billion in lost earnings and foregone taxes over their lifetimes. CED excludes from this figure the billions for crime control, welfare and health care, and other social services, that this group will cost the Nation.

- Currently, according to CED, fewer than 50 percent of high school seniors read at levels considered adequate to carry out only moderately complex tasks, while a staggering 80 percent have inadequate writing skills.
- In the areas of math and science, our students rank near the bottom in international measures of achievement among developed nations.

To combat these and numerous other problems facing American education, the present administration has proposed the creation of "world-class student performance standards" as the first step toward the achievement of six vital education goals. By implication, a "world-class education effort" is required of all school districts and States. Students must have available the facilities, equipment, materials, instruction, teaching methods, etc. which provide them with the "opportunity" to perform at the level set by the world-class standards.

Creating "a learning society" and "a Nation of students" is the overall goal of the strategy of the President and the Nation's governors as contained in "America 2000." This and other similar comprehensive approaches which seek an American solution to the problem of educational improvement presents OERI with an unparalleled challenge. While OERI must strive to satisfy a number of new and necessary demands, it must retain its commitment to the original mission: "... to provide to every individual an equal opportunity to receive an education of high quality regardless of race, color, religion, sex, age, handicap, national origin, or social class..."

This report, and the subsequent reauthorizing legislation based on this report, seeks to provide maximum flexibility for the future functioning of OERI while insisting that the original mission must never be abandoned.

II. RECOMMENDATIONS: FINDINGS AND CONSIDERATIONS

RECOMMENDATIONS

The National Education Goals cannot be achieved without a greatly expanded Federal research, development, and dissemination system. The Office of Educational Research and Improvement (OERI) is in a position to play a pivotal role in the development of a national education reform strategy. If OERI did not already exist, it would have to be invented. Currently, its history of politicization, mission fragmentation, and inadequate funding serve to marginalize OERI's potential influence. The following findings and considerations represent the critical first steps towards OERI's expanded role. Process must be the key concern of OERI. Since most American adults have their own deeply felt recommendations for correcting the shortcomings of our schools, it will be very difficult to reach timely agreements on substance. A process for seeking improvement which is logical and scientific is a matter which all concerned and educated persons should be able to endorse. Consistency also requires that we accept the outcomes/results of such a civilized process.

1. The administrative and policymaking context for OERI must be modified by establishing an Educational Research Policy and Priorities Board which has the status, prestige and credibility necessary to reassure governmental decision-makers and the public in general that there will be a determined ongoing effort to maintain maximum feasible freedom from partisan interference. The Educational Research Policy and Priorities Board shall recommend priorities, review grant and contract-making procedures, and make other relevant policy recommendations.
2. OERI must set priorities for research and establish a series of long-term goals in consultation with Congress, a restructured Educational Research Policy and Priorities Board, and the National Education Goals Panel.
3. The investment goal of the Federal research, development and dissemination function must be 1 percent of the total amount spent nationally on education. Funds spent for these activities by States, localities and the private sector should be included in the overall assessment of the national investment.
4. OERI must require routine professional and independent evaluations of all funded education research, development and dissemination activities and make them available to Congress in prescribed stages over a four-year period.
5. An Institute for the Education of At-Risk Students must be established to conduct intensive research and demonstration ini-

tiatives designed to speedily promote the improvement of education for at-risk students and to provide ongoing assistance to schools whose enrollments are made up predominantly of at-risk students.

6. Private sector involvement in the generation of educational products and services must be thoroughly reviewed and special efforts must be mounted to forge more effective partnerships between the private and public sectors.

7. OERI must make a significant new investment in researching and evaluating new technology capable of improving the quality of education at all levels.

8. The coordination of OERI's mission with that of other components of the Department of Education is critical. OERI must appoint an administrative task force designed to improve the coordination of OERI's educational research, development and dissemination function with those of other Federal agencies.

9. OERI must more effectively coordinate its research and development efforts with the National Science Foundation.

10. OERI must commit to research on the wealth of effective educational practices developed and/or advanced by special education research and devise a system whereby these practices may be transferred to general education and made available for more wide-spread applications.

11. OERI must conduct an on-going review of military educational and manpower training research in order to develop programs and practices which apply the most promising methodologies and technologies to civilian education practices.

12. OERI must develop a national dissemination policy that will advance the goal of placing a national treasure chest of research results, models and materials at the disposal of the Nation's education decision-makers.

13. In order to guarantee the continued infusion and utilization of research and development results, OERI must establish a responsive and interactive delivery system for research, development and dissemination (similar to the original agricultural extension programs of the land grant colleges).

14. OERI must set standards, conduct assessments, and promote research and development activities which enhance the capability of States and local education agencies to improve the governance and management of their schools.

15. OERI should conduct research to enhance the capacity of libraries of all kinds to play a major role in educational improvement and to serve as one of the primary vehicles for literacy education, continuing education, and citizenship education.

16. OERI must join with the newly-established Office of Correctional Education to mount an aggressive research, development, and dissemination initiative targeted at improving correctional education.

17. To improve the transition between school and work and to ensure a systematic approach to adult education, OERI must increase its efforts to identify and evaluate promising programs and practices.
18. OERI must address the need for an expanded educational base by promoting research which fully explores the educational utility of institutions such as public television, zoos, museums, planetariums, symphony halls, and theaters.
19. OERI must provide leadership for the establishment of a more definitive Federal position on the value of the involvement of parents and community-based organizations in achieving the National Education Goals, and for determining the optimum quantity and quality of government support for activities which encourage and enhance the involvement of parents and community-based organizations.
20. OERI must increase minority participation in the full range of educational research and development activities.
21. OERI must increase the investment of research, development, and dissemination efforts to improve the possibilities that all children will start school ready to learn, recognizing that such readiness is the cornerstone to quality education.

FINDINGS AND CONSIDERATIONS

1. The administrative and policymaking context for OERI must be modified by establishing an Educational Research Policy and Priorities Board which has the status, prestige, and credibility necessary to reassure governmental decision-makers and the public in general that there will be a determined, ongoing effort to maintain maximum feasible freedom from partisan interference. The Educational Research Policy and Priorities Board shall recommend priorities, review grant and contract-making procedures, and make other relevant policy recommendations.

In order to achieve universal educational improvement and the National Education Goals, federally-sponsored education research and development must be placed on a nonpartisan course. OERI, as a subordinate administrative entity within the Department of Education, must be given, at the very least, a measure of decision-making autonomy to insulate the office from the partisan political pressures that will continue to build as the educational crisis we face worsens.

Many teachers and education professionals view OERI's efforts with great suspicion and are reluctant to explore ideas and approaches which they, rightly or wrongly, consider more useful to politicians on their campaign trail than to teachers in the classroom. This distrust of OERI was shared by many in Congress and led to a sharp decline in the resources available for educational research and development. Though appropriations for OERI have rebounded somewhat in recent years, the perception that its work is tainted by partisanship remains. Significant increases in appropriations are unlikely so long as so many in Congress continue to regard OERI as either irrelevant to or obstructive of the critical task of education reform.

Even more important is the threat that partisan interference poses to the integrity of the research enterprise itself. The ambitious National Education Goals, promulgated by the President and the Governors, cannot be achieved without a sound, objective base of research to guide practitioners and administrators. This kind of knowledge base can only be developed by an entity which is driven exclusively by a commitment to excellence and a determination to identify and replicate what works in education—and not merely what sells well and sounds good.

The concern that federally-funded research be insulated from partisan interference is not a new one. The founders of the original National Institute of Education (NIE) explicitly sought this kind of insulation, but the administrative structures they devised to achieve it proved inadequate. Although the National Council for Education Research (NCER) was meant to be a broadly representative advisory board with the powers to recommend policy, no specif-

ic board membership criteria was established. Furthermore, because the body's nomination process was entirely in the hands of the executive branch, critical delays in selecting a board affected NIE's ability to present credible testimony before key congressional appropriations committees.[1] As Albert Shanker, President of the American Federation of Teachers, has stated in Subcommittee hearings:

> The history of our Federal education research effort as incarnated by NIE and OERI has been a short, troubled and turbulent one. It has been marked by a surfeit of politics, short-term thinking, a declining budget and declining confidence, and much demoralization. This is a tragedy . . . not only because the promise was so great, but because so much good work has indeed been produced.[2]

The General Accounting Office provided support for Shanker's assertions in their report and testimony before the Subcommittee. OERI has suffered from precipitous declines in funding, frequent changes in leadership and priorities, and declines in the quality of the information produced.[3]

A more independent and representative board is a crucial first step in restoring the credibility of the educational research enterprise. This view is also shared by the independent Office of Technology Assessment (OTA):

> Lessons learned from research institutes in other areas could be used to construct a charter that would provide the greatest possible insulation from political manipulation while ensuring that the system was responsive to the needs of its clients—the Nation's students and teachers.[4]

In some of the major research fields, from space exploration to health, boards similar to the kind recommended have significantly shaped policy and have been successful in attracting widespread and sustained support for their work. Unless OERI is given more freedom from partisan interference, the office will not enjoy the benefits of more prestigious agencies (e.g., stable and steadily increased funding, ability to attract and retain high-quality personnel); consequently, the National Education Goals will remain out of reach. We are proposing a structure which allows for participation of a wide range of individuals who will bring objectivity to policy-making, priority setting, and the grant-making process. The Educational Research Policy and Priorities Board will be responsible for shaping the educational research, development, and dissemination policy in the United States. Membership, limited to a maximum of 24, could be composed as follows:

Presidential Appointments—16 to be appointed by the President with the advice and consent of the Senate who shall include:

- 7 who shall be appointed from among researchers in the field of education who have been nominated by the National Acade-

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[1] L. Sproull, S. Weiner, and D. Wolf, *Organizing an Anarchy: Belief, Bureaucracy and Politics in the National Institute of Education* (Chicago: University Press, 1978) 85.

[2] United States House of Representatives, Subcommittee on Select Education, Oversight Hearing on the Office of Educational Research and Improvement (OERI), Testimony of Albert Shanker, April 20, 1988.

[3] United States General Accounting Office (GAO), *Education Information: Changes in Funds and Priorities Have Affected Production and Quality*, (Washington, DC: GAO-PEMD-88-4, November, 1987).

[4] United States Congress, Office of Technology Assessment (OTA), *Technology and the American Economic Transition: Choices for the Future*, May, 1988.

my of Sciences, including persons who are among the leading authorities on early childhood and adult education.

- 3 classroom teachers, at least 2 of whom continue to work regularly in the classroom, who shall be appointed from among outstanding teachers nominated by the American Federation of Teachers, the National Education Association, the Association of Young Children, the Head Start Association, and other national organizations of teachers.
- 1 chief state school officer who shall be appointed from among those nominated by the Association of Chief State School Officers.
- 1 school superintendent who shall be apppointed from among those nominated by the American Association of School Administrators.
- 1 professional librarian, school library media specialist, library administrator, or library science educator who shall be appointed from among those nominated by the American Library Association and other national organizations of library professionals.
- 1 parent with a demonstrated record of promoting parental involvement in education who shall be appointed from among those nominated by the National Parent-Teachers Association and other national organizations of parents.
- 1 individual from the non-profit foundation community who shall be appointed from among those individuals nominated by foundations which have been involved consistently and significantly in efforts to improve education.
- 1 individual from business and industry with significant experience in promoting private sector involvement in education who shall be appointed from among those nominated by the Committee for Economic Development, the National Alliance of Business, the Chamber of Commerce, and other national organizations.

Congressional Appointments—Total of 8 members:

- 3 members to be appointed by the Speaker of the House of Representatives.
- 1 member to be appointed by the Minority Leader of the House of Representatives.
- 3 members to be appointed by the Majority Leader of the Senate.
- 1 member to be appointed by the Minority Leader of the Senate.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. The Educational Research Policy and Priorities Board should meet on a biannual basis: once to set the agenda for the effective use of research, development and dissemination, and to provide recommendations on the agency's budget and policies impacting research priorities, grant and contract-making procedures; once with the National Education Goals Panel to monitor progress toward the National Goals and to prepare an

annual report to the Congress providing its recommendations on future policy for research, development, and dissemination.

2. Executive Membership of the Educational Research Policy and Priorities Board should meet quarterly.

Preliminary Report Priorities 9/1988	President & Governors Priorities 12/1989
1989-1999	
A. Fully implement early childhood programs to cover all eligible children	By the year 2000, all children in America will start school ready to learn
B. Introduce Oriental and Slavic language studies into every high school in America	
C. Achieve a 90% graduation rate for High School	By the year 2000, the high school graduation rate will increase to at least 90 percent
D. Double the number of minority graduates entering the teaching profession	
E. Achieve a 90% grade level reading rate for all ninth graders (as determined by a nationally accepted test)	
	By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, history, and geography, and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy
1999-2009	
A. Increase by 50% the number of students entering into and graduating from college	
B. Improve the ratings of performance of American students in international math and science comparisons	By the year 2000, U.S. students will be first in the world in mathematics and science achievement
C. Ensure 100% computer literacy for all high school graduates	By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship
D. Introduce individualized educational programs into all elementary and secondary schools	
E. Achieve a 90% adult literacy rate nationally	By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning

2. OERI must set priorities for research and establish a series of long-term goals in consultation with Congress, a restructured Educational Research Policy and Priorities Board, and the National Education Goals Panel.

The National Education Goals are exceedingly important because they form the basis for the development of a strategy to deal with our failing education system. In 1988, the Subcommittee, in its Preliminary Report, called for the adoption of priorities in order to provide a focus for a national education agenda. In 1989, at the Charlottesville Education Summit, the President and the Governors reaffirmed the Subcommittee's position on the need for priorities by establishing priorities for the year 2000. [See page 12.]

The National Education goals have created a new environment for priority-setting in the area of education research, development, and improvement. The goals must be accompanied by a strong implementation plan in order that they not be dismissed as empty rhetoric.

As a Nation, we face serious education problems. At one extreme, our best schools do not measure up to those of our major commercial and industrial competitors; our best students in math and science receive an inadequate education. At the other extreme, large numbers of schools are collapsing because we cannot provide the minimum financial resources necessary to maintain even the basic staff, equipment, and physical plant.

We need a strategy to upgrade all aspects of the education system in neighborhoods of all kinds in all areas of the country. Education research must provide better test data, and more critically, provide the seed corn for the experimentation and demonstration so desperately needed to change the "factory model" of schools that fail 80 percent of the students.[5]

The Subcommittee hearings produced evidence that OERI has a limited capacity to engage in significant long-term planning to address the problems schools will confront in the year 2000 and beyond. The dangers of short-term funding and rapidly shifting priorities—that have served to further weaken the credibility of the educational research and development enterprise and prevented the marshalling of resources around key priority areas—were also made evident. The Federal educational research capacity must go beyond the personal preferences of incoming Assistant Secretaries and the demands of political fashion.

The agency's inability to plan ahead has precipitated a lack of long-term, carefully evaluated research—precisely the type that is highly valued and has made a difference at the policy level. The single best known example of this work is the Perry Pre-school Project, which continues to be funded through the High/Scope

[5] Oversight Hearing on OERI, Testimony of Albert Shanker, April 20, 1988.

Foundation based in Michigan. The work was based on a commitment to improve the educational experiences for a group of disadvantaged preschool children. The long-term research made it clear that specific kinds of early intervention were effective means of avoiding the high societal cost of educational failure.

As stated in the Preliminary Report, our planning must take into account some of the basic economic realities that will impact on us by the end of the century (e.g., the projected shortage of skilled labor to fill an increasing amount of jobs that require at least a high school diploma). We all agreed that the goal of a 90 percent graduation rate by the year 2000 should be more that just an ideal; it must be a real target for the entire society if the United States is going to compete in today's international marketplace.[6]

The potential for change may be greater in some areas than in others. The National Academy of Education, following the Subcommittee's suggestion contained in its Preliminary Report will shortly report on its evaluation of our educational knowledge to date and identify areas most likely to yield the greatest potential to improve student learning. We require improved processes which will enable OERI to make informed, rational decisions about how it can most efficiently use, as well as build upon, the existing knowledge base to most effectively meet the Nation's current and future needs.

The formation of the National Education Goals Panel provides us with an opportunity to consider the broadest possible ways in which our national investment in research and development can be expanded and marshalled to enable the kinds of transformations needed to ensure the attainment of the National goals by the year 2000. The National Education Goals are not self-executing. Therefore, the National Education Goals Panel should work with the restructured OERI Educational Research Policy and Priorities Board to develop research priorities. To a large extent, OERI needs to be more "mission oriented," but as with military and medical research, that emphasis must include basic research. Indeed, basic research very often drives the mission of many of these agencies, providing new ideas and unearthing new and innovative approaches. Federal educational research has historically been unable to take full advantage of basic research since it has lacked the financial capacity found in military and medical sciences research. As OERI moves to transform the National Education Goals into research priorities, it needs to adhere to the guidelines established under existing authorizing legislation.

We must insist that the issue of education equity be addressed. Although existing legislation clearly calls on OERI to place the highest priority on the inequality of opportunities in education, OERI has failed to do so. The failure of urban public schools, the lack of educational resources in rural settings, the extraordinary drop-out rate for students in regular and special education have a direct correlation with the pervasive trends in the past 20 years of inequity.

Urgent interventions at the local level are called for to prevent school districts from total collapse as has occurred most notably in

[6] Oversight Hearing OERI, Testimony of Gordon Ambach, April 21, 1988, 80.

Patterson and Jersey City, New Jersey, Chelsea, Massachusetts and Chicago. We must, as well, assist States such as Kentucky and Texas, struggling to reform inequitable systems of school financing. A national strategy of educational improvement has to begin to target those urban school districts that are experiencing the highest drop-out rates, the lowest per pupil expenditure, high rates of school board corruption, and the lowest levels of educational achievement. As the New Jersey Supreme Court stated in its *Abbott* v. *Burke*, ruling:

> A thorough and efficient education requires such level of education as will enable all students to function as citizens and workers in the same society, and that necessarily means that in poorer urban districts something more must be added to the regular education in order to achieve the command of the Constitution.[7]

That "something more" must be sustained by Federal support in communities where educational institutions can no longer be considered effective. Research information and technical assistance must be provided in order to minimize paralysis and chaos and to prevent the repetition of ineffective reform cycles. The strategy must also include direct research and technical assistance to those States and communities that, like Kentucky, have made the bold decision to sweep away inequitable educational laws and start to rebuild their entire systems from the ground up.

OERI must be at the center rather than the margin of the educational reform movement. The National Education Goals will not be achieved unless they are tied to a long-term strategy of sound education research and development. A comprehensive bold and systematic approach is now needed.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI's restructured Educational Research Policy and Priorities Board should meet with the National Goals Panel at the earliest possible opportunity to develop a report to Congress and to the executive branch on the proposed research priorities.
2. The National Education Goals Panel needs to appoint an education research, development, dissemination, and evaluation taskforce that can advise the Panel on research priorities within a ten-, twenty-, and thirty-year time frame.

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[7] *Abbott* v. *Burke* (New Jersey Supreme Court 1990) 125–6.

3. The investment goal of the Federal research, development and dissemination function must be 1 percent of the total amount spent nationally on education. Funds spent for these activities by States, localities and the private sector should be included in the overall assessment of the national investment.

There is a widespread consensus that funds devoted to education research and development are dangerously limited. This was not always the case. In 1965, the Office of Education's Bureau of Research administered a budget of $100 million. The Preliminary Plan for the National Institute of Education (NIE—predecessor to OERI), commissioned by the old Department of Health Education and Welfare, called for a baseline budget of $130 million in 1973 dollars with steady increments so that NIE would command a budget of over $1 billion after a ten-year period. Roger Levian of RAND (commissioned to prepare the Preliminary Plan) reflected that only this amount of money "would begin to create an engine of improvement and reform large enough to move the education system." [8] This amount is minuscule when compared with the estimated $268 billion cost of supporting those whom our educational system has failed.[9]

According to the General Accounting Office (GAO), funding for NIE/OERI declined by 79 percent between 1973 and 1986.[10] By contrast, research and development spending by other Federal agencies has substantially increased over this period. For example, research and development spending by the Department of Defense increased 111 percent in constant dollars between fiscal year 1978 and 1988.[11] In 1987, the Department of Education (including OERI) spent $124 million on research and development; the Department of Defense spent over three hundred times that amount—over $36 billion—(62 percent on research, development, test, and evaluation; 38 percent on research related to weapon systems and new initiatives); the Department of Agriculture spent over seven times that amount ($946 million); the Veterans Administration almost twice as much ($210 million); the Department of Commerce over three times as much ($405 million).[12]

According to the Congressional Research Service, the U.S. invests approximately 2 percent of its GNP in civilian research and development.[13] By comparison, the Department of Education's in-

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[8] RAND, *National Institute of Education: Preliminary Plan for the Proposed Institute*, 1971, 153.

[9] United States Congress, Joint Economic Committee, Hearing on the Crisis in the Workplace: The Mismatch of Jobs and Skills, Testimony of Robert T. Jones, Assistant Secretary for Employment and Training, October 31, 1989, 16.

[10] GAO, *Education Information*, 69.

[11] Congressional Research Service (CRS), United States Library of Congress, *The Federal Contribution to Basic Research*, (Washington, DC: CRS 87-633SPR, July 1987) 37.

[12] CRS, *Research and Development Funding: FY 89*, March 1988, 5.

[13] CRS, *Education: The Challenges, Major Issue Forum*, October 1988, 19.

vestment in research and development accounted for 0.2 percent of its total budget.[14]

The total national investment in education (including State and local levels) is $309 billion.[15] Therefore, OERI's funding for educational research ($131 million) is well below the 1 percent considered healthy for any enterprise that needs to adapt to changing demands. The Office of Technology Assessment (OTA) recently expressed the point another way: "If the Nation's educational enterprise invested in research and development in the same proportion to gross receipts as the average U.S. industry, investment would have amounted to between $8 and $12 billion in 1985, 60 to 90 times more than the actual total." [16] For example, the Xerox Corporation spends $700 million (a much greater percentage of its overall budget than that spent by the Federal Government) on R&D.[17]

In a recent article, Dr. Arthur Wise comments:

> Additional resources are required for educational research. Presently far less than 1 percent of the Federal education budget is invested in research and development. In contrast, companies working in arenas utilizing a high technology and information base invest from 7 to 20 percent of their budgets in research and development; the top five companies in computer services spend 16 to 28 percent.[18]

Lewis Perleman of the Hudson Institute has strongly advocated the 1 percent figure stating: "This would be an increase of ten to forty times over the current level of educational R&D investment, and would still leave the education industry spending only half as much on R&D as the average U.S. business." [19]

Professor James Guthrie, another supporter of the 1 percent goal, states:

> Even when philanthropic funds for education research and the contributed time of doctoral student researchers are added, it is unlikely that the total amount [expended nationally for educational R&D] would reach $1 billion. In other words, as an enterprise, higher and lower education in America, an endeavor that expends $300 billion each year, is expected to enhance its productivity from an R&D funding base that is probably less than one-third of 1 percent of its total annual expenditures. This makes no sense. It certainly explains why the Federal Government is unable to exercise any significant influence over education research.[20]

Despite a 41.8 percent budget increase over the previous fiscal year, OERI remains underfunded. Substantial increases will be required as OERI begins to focus on the National Education Goals. Private industry realizes that in a highly competitive, global economy, investment in research and development is necessary to keep a technological edge. Currently, we are competing to maintain our

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[14] GAO, *R&D Funding: the Department of Education in Perspective*, (Washington, DC: GAO/PEMD-88-18FS, May 1988) 5.

[15] United States Department of Education, *The Fiscal Year 1989 Budget*, 1.

[16] OTA bases this estimate on Federal education research spending of $130 million, approximately 0.06 percent of total government spending on education and a private investment of between 3 and 13 percent. See OTA, *Technology and the American Transition*, 458.

[17] Oversight Hearing on OERI, Testimony of Dennis P. Doyle, April 20, 1988.

[18] Arthur Wise, "A Response to America's Reform Agenda: The National Institutes for Educational Improvement," *Educational Researcher*, May 1990, 25.

[19] Lewis Perleman, Hudson Institute Briefing Paper No. 120 (Indianapolis: Hudson Institute, May 1990) 24.

[20] James Guthrie, "Education R&D's Lament (And What to Do About It)," *Educational Researcher*, March 1990, 27.

role in the international marketplace; we stand to lose millions of jobs to our competitors in Europe and the Pacific Rim if we cannot prepare qualified graduates.[21] Simply exhorting people to achieve higher standards will not make the difference; expanding our national capacity to produce high quality information capable of making a difference in the classrooms of America will. OERI—through a substantially augmented national research, development, evaluation, and dissemination system—must take the leadership in this effort.

[21] National Center on Education and the Economy, *America's Choice: High Skills or Low Wages*, Report of The Commission on the Skills of the American Workforce, 1990.

4. OERI must require routine professional and independent evaluations of all funded education research, development and dissemination activities and make them available to Congress in prescribed stages over a four-year period.

It is the responsibility of government to provide information regarding the results of federally-funded programs or research. Without such information it becomes difficult to assess the value of the work being performed and to make the case for more funds if warranted. "In the past, sound evaluations have contributed strongly to well-informed decisions, such as those to maintain effective programs like Head Start or runaway and homeless youth. Without such evaluations, these important programs might not have survived the budget cuts that depleted other programs whose effectiveness had not been so solidly established. . . . Today, the capability to perform program evaluation is drying up . . . in such [critical] areas as defense, health care, education, and the environment where it is . . . most needed." [22]

Federal education evaluation activity began with the Elementary and Secondary Education Act of 1965 (ESEA) which required that all education programs be evaluated. With the rapid increase in ESEA funding during the 1970's, every State was providing grants (through Title III of that Act) for innovative school programs, thus creating a need to strengthen the existing review and evaluation mechanism. No longer were the assertions of program developers acceptable as evidence of program effectiveness. In 1974, the Office of Education and the National Institute of Education created the Joint Dissemination Review Panel (JDRP) made up of staff members from both agencies as the formal review and evaluation component. Subsequently, JDRP (later reorganized as PEP—Program Effectiveness Panel) became the evaluation arm for the National Diffusion Network (NDN).

No other agency in the education field has evoked more respect for its evaluation process than NDN. Historically, we have looked to NDN's PEP as the model for the evaluation of education programs. At its pinnacle, PEP made evaluation decisions on 700 submissions for exemplary program status over a 20-year period. "From the outset, the Panel stressed strong evidence in the form of quasi-experimental designs and measures whose reliability and validity could be clearly established. In an attempt to expand the process, the Panel has altered some of its procedures over the years: agreeing to review programs that had not been developed with Federal money; broadening membership to include non-Federal panelists; conducting reviews by mail; replacing its 'majority rules' approval with a point system." [23]

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[22] Charles A. Bowsher, "Program Evaluation is Essential," *The Bureaucrat*, Fall 1990, 6.
[23] Conrad G. Katzenmeyer, "Singing the Same Old Tune: Federal Evaluation Policy and the Program Effectiveness Panel," *Theory into Practice*, V. XXX, Number 1, Winter 1991, 70.

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In the late 1970's through the early 1980's program submissions reached their peak, averaging 58 per year. With the demise of Title III and cuts in other programs, PEP experienced a decrease in submissions. Of the 27 submissions between 1988 and 1989, half were recertifications; "of the 14 submissions approved, only 8 were new to NDN. In the past 5 years, in keeping with Federal regulations, the Panel . . . has begun to review and recertify programs it had approved in years past." [24]

Although NDN has been touted as the best instrument for evaluating education programs, reality demands that we objectively look at some of its underlying weaknesses: its portfolio only contains 42 currently validated programs; a majority of its 248 active programs lack current recertification; and there is no verifiable evidence of the effectiveness of programs after they have been adopted or replicated by a school or school district. NDN has also been criticized for a lack of exemplary programs from the science and library areas.

In the fields of science and health, The National Science Foundation (NSF) and the National Institutes of Health (NIH) use the peer review process, a time-honored and respected evaluation model which has been universally replicated. This model was used at least 300 years ago in England to evaluate scientific papers for publication. Federal use of peer review dates back to 1937 when the National Advisory Cancer Council was authorized to review applications for research funding and to certify approval for projects with potential to significantly contribute to knowledge about cancer. Currently, NSF and NIH rely predominantly on external peer review (the advice of experts in the field) in awarding research projects.

Within the scientific community, peer review has been continually and overwhelmingly endorsed as the best method of assuring that the best research is funded. On the other hand, GAO in its audit of peer review, found that it has been criticized as "an incestuous 'buddy system' that frequently stifles new ideas and scientific breakthroughs. In a survey of 4,100 members of a national honorary scientific society, 36 percent agreed with the statement that 'procurement procedures for grants to do governmentally-sponsored research depends on who you know.' Many requests seem to be funded primarily because the researchers are already known and supported by the granting organizations." [25] GAO further found that there have been only a few studies performed in determining the reliability and effectiveness of the peer review method. Two studies performed on past NSF funding decisions found that reviewers a year later disagreed with at least one quarter of the original NSF decisions. "Thus, some have argued that chance can play a significant role in whether a proposal gets funded since a different group of reviewers may come to an alternate conclusion." [26]

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[24] Katzenmeyer, 70.
[25] GAO, *University Funding: Information on the Role of Peer Review at NSF and NIH*, March 1987, 7.
[26] GAO, *University Funding*, 36.

In the area of education research, development, and dissemination, professional and independent evaluations are extremely weak. OERI has failed to exercise leadership in this area. The GAO, in its Transition Series, stated:

> Since the early 1970s, education studies have declined sharply. Program evaluation studies, in particular, have declined by over 65 percent. Moreover, the statistical data produced were often stale (3–5 years, or more, out of date) and the technical quality varied.
>
> The research function could benefit from the lessons learned in reconstructing the statistical systems. . . . The laboratory and center systems . . . currently . . . consume about 95 percent of the Department's non-programmatic research resources, yet no evaluative data exist on whether this is an optimal use of limited funds. How priorities for these awards are set will affect the flow of educational information for the next 5 years.[27]

The U.S. Department of Education annually spends more than $20 billion to support over 100 elementary, secondary and postsecondary education programs; yet, it has failed to adequately evaluate them.[28] Funds spent to evaluate this investment declined 31 percent between 1975 and 1984; and approximately one-tenth of 1 percent of total amount spent on the Department's programs is for evaluation.[29] Alan L. Ginsburg, Director of the Department of Education's evaluation arm, makes clear that "some program offices have refused to conduct studies that might raise concerns about the effectiveness of their efforts." [30] He also cites underlying weaknesses of the few evaluation studies that have been conducted: They do not reveal information about program implementation and are so poorly designed that results of demonstration programs are almost valueless.

OERI continues to defer systematic and thorough review of the entities it funds. It should coordinate its evaluation efforts with the Office of Planning, Budget, and Evaluation (OPBE) which has made efforts to develop more rigorous programmatic evaluations. OPBE has a professional review group to audit the quality of the evaluation methodology in order to ensure OPBE's desire to relate evaluation objectives to legislative objectives and coordinate the delivery of formative data to coincide with legislative reauthorization.

The time has long passed when hearsay and anecdotal evidence about the value of funded activities can be substituted for hard documentation. While education research, development and dissemination work can be difficult to evaluate, it should be possible to develop reasonable criteria to assess progress towards clearly identifiable goals. Strong OERI leadership is necessary to facilitate more professional evaluations which would improve the credibility of educational research. What is needed is a hybrid evaluation model—the knowledge of the peer reviewer, the discipline of the NDN PEP criteria, and the understanding of the professional who works in the field. In keeping with this, it is imperative that OERI develop an on-going evaluation criteria that follows a four-step process: (1) a start-up assessment; (2) an operations review; (3) a

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[27] GAO, *Transition Series: Program Evaluation Issues* (Washington, DC: GAO/OCG–89–9TR, November 1988) 16–17.

[28] Alan L. Ginsburg, "Revitalizing Program Evaluation: The U.S. Department of Education Experience," *Evaluation Review* Vol. 13, No. 6. December 1989, 579–597.

[29] GAO, *Education Information*, 72.

[30] Ginsburg, 582.

third year progress report; and (4) a final evaluation which utilizes material from the first three years. Evaluation and monitoring must be used to assure that organizations funded by OERI adhere to the goals and objectives articulated in their proposals in order to assess compliance and future funding. OERI must view evaluation as an integral part of research, development and dissemination; as a tool for management and funding decisions; and as a communication and reporting device. OERI must obtain continual evaluation feedback on effective programs and exemplary products.

"If the current . . . erosion [of] evaluation capabilities continues, reports from [the General Accounting Office—GAO], its sister agencies [the Congressional Budget Office—CBO, the Office of Technology Assessment—OTA, and the Congressional Research Service—CRS], and from private sector analysts may become the only sources to which the Congress can turn for sound information to guide key decisions. Agencies [which lack] their own evaluations will not [be] insulate[d] from congressional oversight. On the contrary, [they] could find themselves excluded from meaningful participation in congressional decisions." [31]

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must incorporate fair and public evaluations into all of its activities (ranging from hiring experts and funding projects to identifying and disseminating effective/exemplary programs, products, practices and policies). Lists of criteria should be public to avoid questions of objectivity and credibility.
2. OERI must require that projects provide consistent, critical, descriptive and evaluative information for placement in the National Dissemination Library Network.
3. The proposed OERI Educational Research Policy and Priorities Board (see Recommendation 1) must be responsible for oversight of OERI's four-step evaluation process.

[31] Charles A. Bowsher, 5.

5. An Institute for the Education of At-Risk Students must be established to conduct intensive research and demonstration initiatives designed to speedily promote the improvement of education for at-risk students and to provide ongoing assistance to schools whose enrollments are made up predominantly of at-risk students.

Although many warnings have been sounded since the early eighties that the Nation was ignoring the needs of the growing numbers of at-risk students (see Appendix A), the administration has persisted in doing business as usual. The public has been allowed to believe that a debate about the need for greater educational excellence in our schools can substitute for a serious examination of what has gone wrong for countless thousands who have not learned the most basic skills, and whose futures have been disastrously foreclosed. It is obvious that excellence cannot be achieved while large percentages of our students continue to fail to receive an adequate education. Unless the issue of educational equity is fully and systematically addressed through a research and action agenda for the 1990s, we will create a permanent underclass of people trapped in a web of dependency and failure. The National Education Goals must be interwoven with the mission of the new institute. If we intend to attain these goals (e.g., preparing students so that they are ready to learn, achieving a 90 percent graduation rate, or becoming the first in the world in math and science), dramatic and systematic new efforts are necessary to address the overwhelming needs of at-risk students.

Present law requires that all federally-funded centers, laboratories, independent researchers, bureaus, etc. engage in activities which contribute to the effective education of at-risk students. This is the mandated mission and goal of all activities financed by the Office of Educational Research and Improvement (OERI). The following quote from the OERI mission statement provides the most relevant illumination:

> . . . The Office, shall, in accordance with the provisions of this section, seek to improve education in the United States through concentrating the resources of the Office on the priority, research, and development needs described in paragraph (3)(B): . . . [improve] the ability of schools to meet their responsibilities to provide equal educational opportunities for all students, including those with limited English-speaking ability, women, older students, part-time students, minority students, gifted and talented students, handicapped students, and students who are socially, economically, or educationally disadvantaged.

Despite this clear mandate, the research on at-risk students (with only a few exceptions) has been woefully inadequate. As a recent OERI report points out, we have made some progress on how to improve the achievement of at-risk students in the elementary school years with the help of funds that have come from outside the Department of Education; yet, "we have no comparable scientific basis for recommending programs that work for at-risk students in the middle and high school years. What we do have at these upper

grades is a mix of disparate programs that have been proposed but seldom implemented, or have been incompletely evaluated." [32] We repeatedly fail to learn the lessons of successful models and perpetuate past mistakes. Predictable programmatic failures "are interpreted as evidence that high-risk families are beyond help. . . . Because these lessons are unlearned, we pay the price over and over again." [33] The stakes are now far too high for us to keep repeating past errors.

An Institute for the Education of At-Risk Students must be established to provide the commitment necessary for ensuring the education of our most vulnerable students. The Institute would become a major rudder and gyroscope for research and development activities, providing the intellectual and logistical support for lasting change in a system that most recognize as dysfunctional for large percentages of students who are at risk of educational failure. The Institute would serve predominately the following groups: those who live in high poverty urban and rural areas as well as individuals in need of bilingual education.

The Institute will not be bound by the parameters which have limited the federally-funded centers and laboratories. Instead, it will have maximum flexibility to engage in research, development and dissemination activities which promote the effective education of at-risk students. The new entity should be structured to initiate and oversee a variety of approaches to research in combination with extensive experimentation and dissemination. The Institute will, for example, be given the authority (and the funding) to award mini-grants and contracts to agencies, groups or individual researchers in order to close the gaps in research knowledge needed immediately by systems serving at-risk students. In this capacity, the Institute will coordinate activities with other components of OERI and entities such as Historically Black Colleges and Universities (HBCUs). The Institute will differ from any other entity currently funded by OERI in the following ways:

- It will concentrate and solidify that part of the OERI mission directly related to those who have the greatest and most desperate need for educational improvement.
- It will represent a direct response to the "education emergency" which presently exists in our inner cities, certain rural areas, and among bilingual populations.
- It will create an entity with the capacity to marshall resources from all parts of the Federal Government and the private sector to meet the existing emergency.
- It will be a Federal instrument with maximum flexibility and high national visibility.
- It will be a non-partisan entity structured to maintain the highest degree of professionalism available as a resource to all concerned with the education of at-risk students and the general improvement of education in America.

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[32] Jim McPartland and Robert E. Slavin, "Increasing Achievement of At-Risk Students at Each Grade Level," *Policy Perspectives*, U.S. Department of Education, July 1990, 15.

[33] Dr. Elizabeth Schor, *Within Our Reach: Breaking the Cycle of Disadvantaged*, (New York: Anchor Press, 1988) 260.

- It will attract top scholars in education and exert a positive influence on policymaking, experimentation, evaluation, and institutionalization of new education practices.
- It will establish special relationships with predominantly minority higher education instutions, rural-focused colleges and universities, and institutions specializing in bilingual education.
- It will promote a special involvement of scholars with expertise and experience in the education of rural, bilingual, African-American, and other minorities, as well as all poor persons.

Since global competition and national necessity now dictate that the mission of OERI must be expanded to improve education for all students everywhere in America, a special entity must now be created to prevent the dilution of the original mission of OERI. A compensatory effort is now also necessary to close the gap and fill the vacuum created by gross past failures of OERI to seriously implement its mission. The current state of emergency also impacts upon the constituency targeted by the original OERI mission statement (see above). The Institute for the Education of at-Risk Students will concretize and solidify the core of policies, actions, and activities related to the original mission.

This new Institute will: harvest the products that have already been generated by existing centers and labs; enhance collaboration among ongoing projects and activities; coordinate similar and supportive work among the centers and laboratories; launch new research efforts to close identified gaps; maximize the dissemination functions of the existing ERIC centers; and expand the development and dissemination activities in ways which guarantee an ongoing Federal resource for local education agencies, teachers, parents and community leaders who are confronted with the challenges of educating at-risk students.

The Institute will become the keeper of the treasure chest of new concepts, models, and publications regarding the education of at-risk students. The synthesis of existing research results would, at minimum cost, speed the application of relevant findings. The Institute will identify what is most relevant for client teachers and systems serving at-risk students and direct the dissemination of this valuable material to areas of greatest need. Massive duplication and distribution of such products would be subsidized by a special budget. And finally, the Institute will be charged with maximizing support for the development of a program model which provides for ongoing research, development and dissemination for teachers, school systems, parents and community leaders. The first 50 research and development districts, located within the poorest congressional districts, will be closely linked to the work of the Institute as they seek to demonstrate the viability of the education extension experiments. The gravity of the present situation within urban communities with large concentrations of at-risk students is such that there is a need for an ongoing Federal presence. The research, development, and dissemination treasure chest (see Recommendation 12) must be constantly and conveniently available.

Collaboration with ongoing projects and activities sponsored by the existing centers, labs, and information units would also yield considerable results with a minimum amount of new investment. Much of the work done by these existing entities has some utility in the schools and classrooms serving at-risk students. Such collaboration, however, cannot yield rewards if it is conducted as an informal, volunteer, or extra work activity. Specific staff, travel budgets, incentive systems, etc. must be made available for this purpose.

Closely related to the collaboration with individual agencies would be the coordination with several entities to enhance special projects or results and hasten their availability to the educators of at-risk students. For example, the Institute will coordinate with NSF, NCES, and OERI in collecting data on gender, class, and race for the evaluation of promising science programs; with NAEP in disaggregating information pertaining to the progress of at-risk students.

In developing a structure for the Institute, we have used the National Science Foundation (NSF) as the model we feel most suitable to ensure independent, credible research information. Therefore, the Congress must establish a Board consisting of 33 members appointed by the President, with the consent of the Congress, with specific instructions that the Board should not be limited to advising on internal Institute operations but would contribute to the development of a national agenda for research involving students from high poverty urban inner cities and rural areas and those in need of bilingual education.

The Institute will be structured to systematically provide the emergency guidance necessary to impact the educational crisis we face. A national commitment—on a scale large enough to sustain such a comprehensive effort—must be launched and sustained. The Institute must be funded at a level commensurate with its herculean mission in order to achieve its desired impact. The resources of the Institute will support the functions of research, coordination and dissemination, demonstration and evaluation, and technical assistance.

Funds should be allocated to evaluate promising programs that heretofore have only been demonstrated in discrete settings with specific populations. For example, the Center for Research on Effective Schooling for Disadvantaged Students, which began receiving funds two years ago, would work closely with the proposed Institute. Currently, this center is replicating the promising "Success for All" program in six inner-city Baltimore elementary schools. The Institute would ensure additional funding to support the expansion of this demonstration program into other settings (e.g., in rural schools with high concentrations of multilingual children, etc.).

Another example is James Comer's School Development Program, designed to improve student performance, began as a collaborative venture between the Yale Child Study Center and the New Haven, Connecticut School System. The model is based on an understanding of child development and a participatory school management system which includes a team approach to mental health and parent involvement in school governance and planning.

Success of the program is attributed to the fact that the model creates processes and structures that modify attitudes, incentive structures, and ultimately, behaviors, resulting in increased attendance and higher achievement.[34] Though hailed by the Bush administration as an exemplary program, on five separate occasions Comer's School Development Program was denied funding by the Federal Government. Fortunately, its merit was recognized by the private sector (The Rockefeller Foundation has committed $15 million towards its replication across the country). The Federal Government cannot afford to overlook programs such as this which provide ample evidence of effectiveness.

The Institute would establish a panel, composed of experts and scholars in the area of the educationally at-risk, who would be responsible for the development and implementation of assessment criteria used to determine program effectiveness, as well as determining which promising practices and effective programs should be the subject of further demonstration and evaluation.

The experience gained through the implementation of promising programs, coupled with greatly improved evaluative data, will enhance the kinds of technical assistance the Institute would provide to the SEAs and LEAs through the work of the District Education Agent Program operated by Learning Grant Institutions (see Recommendation 13). These programs will track the progress of models and strategies and, identify, from the research in-progress, those schools and institutions that might benefit from early implementation of these experimental models. One aspect of the District Education Agent Program would be to conduct public meetings and engage in other outreach and public awareness efforts to promote community interest in prospective innovations tracked by the Institute. The Institute will maintain a special budget for emergency grants to LEAs able to benefit from participation in demonstration programs.

In order for the Institute to maximize its effectiveness, it is vitally necessary that a high priority be assigned to the ongoing inclusion of minority scholars, teachers, and educators as policymakers, planners, and researchers. Professionals who are closest to the problem are likely to generate the most practical and unique insights with respect to the education of at-risk students. The existing Federal infrastructure has failed to provide the necessary incentives to recruit minorities and retain them in top research positions (see Recommendation 20).

The urgency to do more has also been underscored by the House of Representatives Committee on Appropriations Report, that warns that the "lack of minority involvement in the development of educational reforms threatens these initiatives" and directs the Secretary to develop strategies to increase minority recruitment.[35] Therefore, woven into the mission of the Institute will be the responsibility for providing internships, post-doctoral fellowships, incentives for minority practitioners to become involved in research,

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[34] Quality Education for Minorities Project, *Education That Works: An Action Plan for the Education of Minorities*, (Cambridge: Massachusetts Institute of Technology, January 1990) 49.
[35] United States Congress, House of Representatives, Committee on Appropriations Report, July 1990, 168.

and the development of senior research positions for leading minority scholars.

While the Federal Government should make no attempts to command and control any aspects of local education efforts, the Federal Government and its resources must be accessible to those seeking to make educational improvements. Only at the Federal level can the capacity be created and maintained for the research and development necessary to meet the emergency education situation faced by school systems with large concentrations of poor and bilingual at-risk students in our rural communities and crisis-ridden inner cities.

6. Private sector involvement in the generation of educational products and services must be thoroughly reviewed and special efforts must be mounted to forge more effective partnerships between public and private sectors.

OERI's ability to enhance the coordination, evaluation, and dissemination of privately-sponsored educational experimentation will be critical in meeting the National Education Goals. It is imperative that OERI maximize the private sector's considerable investment in research, development, and dissemination, especially in light of the current budget climate which does not allow for significant increases in domestic spending.

Replication of nationally successful interventions is severely limited by OERI's failure to keep track of private sector innovations. OERI's laissez-faire approach encourages the kind of faddism that education is routinely criticized for; it also makes it difficult to generate the kind of vigorous advances in our knowledge base that are so urgently needed. OERI cannot expect the "market place"—operating alone—to determine what eventually succeeds and what fails.

Over recent years, the involvement of the private sector in the improvement of education has become more significant. A report by Public/Private Ventures, in reviewing the various kinds of business participation in education, concludes that, "... economic concerns have been a spur to business involvement in public education. Many large economic issues are being redefined as educational improvement issues. Educational problems are being identified as potential economic catastrophes. Such an environment is fertile for continuing school/business partnerships." [36] Industry support of colleges and universities has risen steadily for the past thirty years, from $40 million to more than $1 billion. Of the more than $3 billion in total annual corporate charitable contributions, more than one third is for education.[37]

The private sector's contribution to educational improvement is varied and not easily categorized. The range of interventions—from school/business partnerships (which rose from 42,200 to 140,000 during the years 1983–84 and 1987–88) [38] to direct support for particular educational innovations in a particular public school system—are producing an immense amount of information which is evaluated sporadically, if at all.

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[36] National Association for Industry-Education Cooperation Newsletter, Vol. XXIV, No. 1, February 1988: 2 [quoting from *Allies in Education: Schools and Businesses Working Together for At-Risk Youth* (Philadelphia: Public Private Ventures) 1987].

[37] A. Magazine and M. Usdan, "Business and Higher Education: New Partnerships for a New Era," *Impact and Challenges of Changing Federal Role: New Directions for Institutional Research*, ed. V. Hodgkinson (1985) 45.

[38] National Center for Education Statistics, United States Department of Education, Office of Educational Research and Improvement, *Education Partnerships in Public Elementary and Secondary Schools* (Washington: Government Printing Office, 1989) 4.

The investment that business is prepared to make to improve the Nation's public schools is of sufficient size and scope to warrant more than lip service from OERI. For example:

> IBM has launched a five-year, $25 million grant program to stimulate innovative use of computer technology in the classroom and to improve teacher preparation in the use of computers. The program will develop classroom laboratories that can serve as technology "show case sites" and will also encourage partnerships of colleges, communities, and school districts to develop innovative uses of information technology.
>
> Citibank has committed to spending $20 million over the next 10 years to improve urban schools in a variety of ways, including the development of new approaches to teaching and the promotion of technology in the classroom.[39]
>
> The Josiah Macy, Jr. Foundation recently announced that it would nearly triple the number of schools that have used its nine-year old, four-state experiment that currently puts 3,000 disadvantaged, academically-average students through courses traditionally reserved only for high achieving students.
>
> RJR Nabisco Foundation has announced a "Next Century Schools Fund" of $30 million to encourage and support sustainable changes in education from kindergarten through 12th grade. According to Louis Gerstner, Chairman and Chief Executive Officer, the program will seek out and support the risk takers (teachers, principals and community groups with bold and innovative ideas and strategies) by giving them a chance to put their ideas into action.

It is unclear how many of these experiments will continue beyond the period when the grant money expires; still harder to gauge is to what extent, if any, the results of such projects will be disseminated. As a result, OERI is unable to assist the neediest school districts by offering help in implementing alternative approaches. As Dr. Harriet Doss Willis, Director of the Southwest Center for Regional Equity, Southwest Regional Lab, testified before the Subcommittee on Select Education:

> To my knowledge, there is no concerted effort to assist an urban school district with implementing the best knowledge from kindergarten to grade 12. Certainly someone may install a middle school experimental program or come along and install a secondary drop-out prevention program. But there is very little assistance to a school district to look at the entire program from kindergarten to grade 12 in urban school districts.[40]

Further testimony before the Subcommittee revealed that long-term studies are needed. However, due to the exigencies of the Federal budget, it has not been possible to fund them. While typically Federal research dollars are committed for no longer than five years (as is the case with the labs and centers) and field-initiated studies for one year, much of the most significant research of recent years has had to be performed outside of the Federal sector by private groups.[41]

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[39] Nadine Brozan, "From Citibank, Millions for Schools," *The New York Times*, 16 May 1990, B7.

[40] Oversight Hearing on OERI, Testimony of Dr. Harriet Doss Willis, September 29, 1988, 84.

[41] Oversight Hearing on OERI, Testimony of Charles Wallgren, April 21, 1988.

Projects such as IBM's "Writing to Read" program, Apple's "Classrooms of Tomorrow" and the recently created Institute of Research in Learning (supported by Xerox), have been developed as a result of intensive research efforts. Dr. Ernest L. Boyer calls upon the private sector to do even more in this regard by launching a major research and development program:

> Looking to the 21st century, corporations can take the lead in helping to establish public/private initiatives that would seriously address the two most essential questions: What Should We Be Teaching? and How Do We Evaluate the Results?
>
> . . . Surely, by the year 2000, the school curriculum must be something more than fragments of information and disconnected courses. What we need now is a panel of teachers and scholars to explore this central issue of what students should know and be able to do in the 21st Century. One of the best investments industry could make would be to underwrite an R&D project that would develop a more creative and coherent curriculum for the Nation's schools.[42]

The significant challenges of educating 1,500,000 new workers, who will enter the work place over the next ten years, call for many joint initiatives between the public and private sectors. In many other areas of the economy such as space exploration, health, and defense, cooperative ventures are more common than in the educational sphere.

The following are three kinds of institutional models that have the capacity to foster productive cooperation in the area of education and offer the possibility of long-term funding commitments for important longitudinal studies:

Public and Private Sector Cooperative Partnerships:

Education publishers are a very important part of the private sector support for education research and development. However, OERI currently has no cooperative projects with private publishers. In the early days of the National Institute of Education (NIE), many of the laboratory and center resources developed R&D products, using systematic R&D procedures such as field testing and revisions based on user reactions. Many of these national curriculum products were designed to be published by commercial publishers, but this transition was not as easy as planned. In 1977, the National Council for Educational Research (NIE's advisory body) adopted an instructional program improvement policy which stated that the primary purpose of NIE's involvement in this area was to contribute to the equalization of educational opportunity. This policy was narrowed to mean that NIE should not compete with the publishers by supporting full scale curriculum development. It is now clear that this policy was short-sighted and further diminished OERI's ability to allow research to have a more widespread impact.

Two departments within the Federal Government have developed arrangements with education publishers that can serve as potential models of public-private cooperation. The National Science Foundation (NSF) and the Office of Special Education Programs (OSEP) have demonstrated that there are productive ways to work with publishers without posing competitive problems or imposing Federal control over local curriculum decisions.

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[42] Dr. Ernest L. Boyer, "Time to Move Forward," *The Business Roundtable's Participation Guide: A Primer for Business on Education* (New York: National Alliance of Business) 77.

The National Science Foundation, for example, administers a grant competition that encourages partnerships among publishers, school systems and scientists/science educators for the purpose of providing a number of competitive, high quality, alternative science programs for use in elementary and middle schools. The Directorate for Science and Engineering Education competitively solicits bids that require a publisher, as a member of a larger consortia, to contribute a major portion of investment capital, provide an editorial/marketing perspective throughout the editorial process, and disseminate the resulting materials. The Directorate specifies the kinds of proposals that are acceptable and how they will be evaluated. NSF enters into a profit-sharing arrangement, allowing the grantee to own the copyright.[43]

The Office of Special Education Programs already has an ongoing program that provides direct links with publishers. OSEP shares relevant research results with them, and through the LINC project (an education-related clearinghouse), helps them identify products developed with Federal funds that they may wish to publish. While the majority (70 percent) of its funding is Federal, a sizeable amount of its budget comes from other major funding sources, e.g., commercial companies. The LINC project also provides a network between curriculum developers, publishers and practitioners and assists with marketing.

Non-Profit Research Corporations:

The value of intermediary organizations that can garner private sector expertise to help design, implement, and evaluate government social programs has long been recognized. For example, Manpower Demonstration Research Corporation (MDRC) has built a considerable reputation by analyzing supported work initiatives for the Department of Labor in conjunction with the Ford Foundation. Similarly, the Corporation for Public/Private Ventures (PPV)—with business, labor, academic, and community representatives on its board—has generated considerable knowledge about youth employment. A National Learning Foundation has recently been developed as a quasi-governmental, non-profit corporation to coordinate the development of national learning technology networks. The Foundation will have organizational autonomy to engage both public and private resources and expertise. It plans to establish a network to link practitioners and researchers in school, home, workplace, library, museum, or other settings.

Cooperative Government-Industry Research Partnerships:

Several models can serve as examples of effective linkages between government and the private sector. One such example is SEMATECH which performs research on and development of the semi-conductor manufacturing technologies which will help the United States semi-conductor industry regain parity with the Japanese. Fifty percent of the funding for the organization is provided by 14 United States semiconductor manufacturers; the other fifty percent by the Department of Defense. Similar research organiza-

[43] National Science Foundation, *Program Solicitation: Programs for Elementary School Science Instruction II*, OMB3145-0058, 1987, 4.

tions could be assigned the task of producing curricula software designed to meet the needs of specific populations.

The High/Scope Foundation is a private-public partnership which "conducts national and international projects in research, program development, professional training, publishing, and public outreach, with funding support from governmental, private, and internally-generated sources. The High/Scope Foundation is most widely known for the Perry Preschool Project—a continuing, 26-year study that has documented the lasting benefits of high quality preschool programs for children who live in poverty." [44]

These and other institutional arrangements could become critical in making the necessary qualitative leaps forward in building the knowledge base necessary for lasting improvements in the way students are taught and how they learn. Businesses, industries, and foundations must continue to invest at both the macro and micro levels to bring about the necessary changes, and their efforts should be evaluated and coordinated with the help of OERI. At the micro level, mentorships, tutoring, and incentives to stay in school must continue to focus on inner-city youth. Targeted programs at the macro level must be in the area of curricular reform and experimentation, as well as replication of successful models. A key responsibility for the District Education Agent (see Recommendation 13) will be to help the private sector better understand the particular educational needs of the district they wish to serve, as well as to make more readily available information regarding private sector programs within the district.

OERI should carefully monitor and evaluate such efforts and provide, where necessary and appropriate, leadership and technical expertise in order to maintain and replicate these important public-private partnerships. Part of the OERI leadership role in this effort should be to assist the private sector in better addressing the issue of educational equity.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI should conduct a survey and publish an inventory which specifically describes private investments in education (funding levels, age groups addressed, evaluation, and research and dissemination components). Such an inventory should be updated on an annual basis.
2. OERI must develop an action plan detailing what added resources will be necessary in order to monitor, evaluate, and disseminate (on a systematic basis) the results of private sector investments.
3. OERI must ensure the representation of publishers and the business community on appropriate specialist panels advising OERI on research, development, and dissemination priorities in substantive areas. The involvement of publishers in such panels should be mutually beneficial: They can share information on "what's selling" and join with the other specialists in learning where the gaps are.

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[44] Oversight Hearing on OERI, Statement of Charles R. Wallgren, April 21, 1988, 277.

7. OERI must make a significant new investment in researching and evaluating new technology capable of improving the quality of education at all levels.

Education has clearly been the slowest sector of society to adapt to the significant changes wrought by technology. A recent Office of Technology Assessment (OTA) report reflected the view of many information technologists by stating, "... if business organizations today evolved at the same rate as schools, they would still be using quill pens instead of electronic word processors."[45] OERI has shown a disturbing lack of leadership in this area overall. However, when education R&D funding has been focused and consistent, the Department of Education has been able to claim important accomplishments such as the development of children's television programming from Sesame Street to Square One TV; the development of LOGO, a computer programming language designed for children; and the development of technology for students with special needs.[46] Investment in technology R&D has declined since the mid-1980s and "Federal policy for research on technology for the Nation's students has been, and remains, erratic and disorganized, making it difficult to move from basic research to development, testing and dissemination."[47] Although educational technology holds the promise of important breakthroughs within the next two decades in the way we teach, the Department of Education has yet to make the investment commitment necessary to reap the potential benefits:

> By far the bulk of research on educational technology supported by the Federal Government is undertaken by the Department of Defense. While a private information company typically spends several percent of gross revenue on research, virtually nothing is allocated for research directed at the real problems of teaching and learning.[48]

Military spending on R&D technologies in education and training now exceeds $200 million a year compared to only $30 million spent on technology R&D for K-12 education (a ratio of 7:1).[49] The justification for such a significant military investment in educational research and development is based upon such studies as the recent Institute for Defense Analysis survey which indicated that technology-based training is more efficient and effective.[50]

John Sculley, Chairman and CEO of Apple Computers, underlines the fact that schools have not kept pace with the kinds of technological changes that are transforming our society:

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[45] United States Congress, Office of Technology Assessment (OTA), *Power On! New Tools for Teaching and Learning*, 1988.
[46] OTA, *Worker Training: Competing in the New International Economy*, 1990, 26.
[47] OTA, *Power On!* 25.
[48] OTA, *Technology and the American*, 49.
[49] OTA, *Power On!* 155.
[50] OTA, *Worker Training*, 211.

How is it that we have recognized the economic value of Industrial Age tools . . . and yet we don't seem to recognize the economic value of Information Age tools in education? If we are going to be successful in this global economy we have got to change the way people think, communicate, learn and work. We can do this with many of the technologies we have today. We have just not applied them with the same passion and energy that we applied them in the commercial marketplace.[51]

Effective utilization of technology is imperative if we are to realize the National Education Goals by the year 2000. At least three of the goal areas—student achievement, mathematics and science, and adult literacy and lifelong learning—lend themselves to innovative technology interventions. According to OTA, the use of computers for tutorials and simulations improves student achievement; satellite programming has enabled the availability of more challenging curricula in remote areas of the country. At the Center for Technology in Education at the Bank Street College, assessment of progress in math and science has involved using computers to track the problem-solving skills of students over time. Adult literacy curricula and lifelong learning programs make use of various technologies that customize instruction to the individual learner.[52] Without doubt, the probability of attaining the National Education Goals can be enhanced by the informed application of technology.

OERI must develop an education technology policy that contributes to improving the quality of education at all levels. Key aspects of this policy include using technology to increase student learning, adapting existing educational technologies to classroom needs, and improving the research, development, and dissemination infrastructure.

Increase Student Learning

Researchers have for a long time recognized the effectiveness and motivational potential of video, audio, and graphic media. However, development and use of these technologies has largely occurred outside of the classroom where textbook-centered instruction continues to prevail.[53]

Satellites, telephones, fax machines, personal computers, and computer modems, combined with the latest computer software and video technology, can create a truly spectacular range of learning opportunities for everyone in the United States. In fact, "the age of electronic technology" has afforded individuals with disabilities, through access to appropriate technology assistance, the same educational opportunities as others.[54] Yet another example of technology's potential to expand the learning opportunities for a diverse student population is its application in the education of at-risk students. "The technology [to help at-risk students] exists and it is powerful. . . . [IBM's] first educational application, 'PALS,' turns previously illiterate adults into readers six times faster than traditional instruction. . . ." [55]

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[51] John Scully, "The Education Summit: Global Markets, Global Education," *Fortune Magazine* Seminar, Washington, 29 October 1989.

[52] OTA, *Project Proposal: Technologies for Literacy*, 1990, 5.

[53] OTA, *Power On!* 25.

[54] Legislative Hearing on H.R. 4904, Technology-Related Assistance for Individuals with Disabilities Act of 1988, June 30, 1988, Statement of the Council for Exceptional Children, 75.

[55] United States Congress, House of Representatives, Subcommittee on Select Education, Oversight Hearing on the Center for Effective Schooling of Disadvantaged Students, September

Continued

The Omnibus Trade Bill and Competitiveness Act, passed by the 100th Congress in 1988, authorized the "Star Schools" program which provides grants to telecommunications partnerships to develop and deliver instruction in science, mathematics and foreign languages to isolated and underserved high school students. Thirty-three and a half million dollars have been appropriated for the first two years of the program which has provided 35 high school courses serving 2,962 schools in 45 States. Following the direction of the legislation which authorizes at least 50 percent of its funds to school districts serving poorer schools, the next series of grants will serve the inner-city districts of Los Angeles, Boston and the District of Columbia.

While we must be cautious of "technophoria," i.e., unrealistically optimistic expectations of the technology,[56] this kind of high-tech future for schools holds enormous potential to:

1. Enable more individualized learning.
2. Increase student participation in the learning process by using videodisc technology which allows the student to progress at an individualized pace.
3. Increase the involvement of parents, and others in the community, using communication linkages between the classroom computer and the world of home and work.
4. Improve the conduct of research, development, and dissemination in education.
5. Increase access for students in isolated situations.

Adapt Existing Educational Technologies to Classroom Needs

OERI must be on the cutting edge of new technology capable of making a quantum difference in the way teaching and learning is conducted in the next century. While education policy has primarily been made at the State and local levels, the scale of the latest advances in telecommunications requires that the Federal Government become more closely involved in dealing with the questions of standards and technological compatibility.

OERI must maximize the value of existing federally funded educational resources by fostering increased coordination between government agencies. OERI recently established the Office of Training and Technology Transfer (authorized under Sections 6101-6107 of Public Law 100-418, the "Omnibus Trade and Competitiveness Act of 1988") to facilitate the transfer of education and training software developed initially by Federal agencies—to the public and private sectors, and to State and local governments in order to support the education, training, and retraining of citizens.

The Office of Training and Technology Transfer (OTTT) will also locate and disseminate successful software programs developed by other Federal agencies. For example, a software program, the Job Skills Education Program, developed over a ten-year period by the Army Research Institute, was modified and has recently been pilot-

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29, 1988, Prepared Statement of Dale Mann, Center for Education and the American Economy, 68.

[56] Term coined by C. R. McClure of Syracuse University in testimony before an October 12, 1989 Hearing of the House Committee on Science, Space and Technology, Subcommittee on Science, Research, and Technology.

ed in an adult education program in White Plains, New York. The improvements in basic skill levels for the predominantly African-American and Hispanic enrollees in the program were outstanding. This program represents one of the few demonstrably successful efforts to significantly improve the basic skill levels of primarily disadvantaged or at-risk populations which simultaneously offers a high chance of replicability in other contexts. Facilitating the transfer of already developed software programs is a cost-effective means of capitalizing on what we already know works to improve the skill and knowledge levels of users in other contexts.

There are still some serious questions about the extent to which new computer technologies are capable of making critical differences in classroom learning. OERI is in the best position to assess how we should prioritize key aspects of our educational policy. In this regard, we need to discover the extent to which teacher training and technical assistance are necessary, as well as the extent to which changes in Federal laws might permit greater cooperation among software providers.

Improve the Research, Development, and Dissemination Infrastructure

New technologies that allow the linkage of teachers with researchers through a computer-based interactive network hold enormous potential to transform the delivery of research information to practitioners and make a major difference in the way reform efforts are carried out. The State of Maryland has already assembled a prototype of a multi-media database that can provide teachers with current research information using computer-linked videodisc players. Practitioners can access current research that pertain to practical classroom problems and see examples of teachers using particular exemplary approaches. The National Education Association's "Mastery in Learning" project provides interactive computer linkages between schools and researchers in labs and centers as well as universities. Currently, there are 26 public schools in 19 States which are linked into the network. The proposed District Education Agent program (see Recommendation 13) could serve as the hub of such networks so that the most up-to-date innovations can be transmitted to the local school systems which face the challenges of high poverty. OERI should also establish a national multimedia database that can provide States and localities access to practitioner-oriented, research-based materials.

There is a clear Federal responsibility both to invest in the research and development of new technology and to assist schools to move into a new technological era—an era which we have thus far stumbled into, rather than carefully planned for. An educational technology policy that addresses the needs of the Nation's schools and factors in teacher training and support must be developed in consultation with private industry, top researchers, and practitioners.

OERI should continue to expand the use of telecommunications technology to meet pressing national needs. For example, the distance learning technologies can improve the supply of highly qualified teachers in the poor urban schools (the Star School system has already delivered college courses to 720 teachers and 22,631 have

participated in staff development courses). OERI can use its labs and centers to evaluate the effectiveness of distance learning, as well as provide technical assistance to school systems in adapting technology to their particular needs.

OERI must continue to research the ways learners process information presented in non-print media and how symbolic representation of information (maps, charts, graphs, videotapes, etc.) affects understanding. The Office must fund projects designed to demonstrate the educational value of non-print media.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. The administration should prioritize funding for the Office of Technology Transfer at its initial authorization of $3 million. Additional proprietary protections must be established that permit both adequate incentives for developers and the widest possible dissemination to interested users.
2. OERI must establish an advisory panel to provide important guidance on the use of technologies in classroom learning. Evaluation studies should be carried out to determine the effectiveness of educational technology (e.g., distance learning) on learning outcomes for young or academically weak students. Such studies should reveal what works and under what conditions.
3. Centers for Interactive Technology and Education should be created to conduct research, development, demonstration and training on educational technology projects. These centers should be conducted as public-private partnerships and be closely tied to schools.

8. The coordination of OERI's mission with that of other components of the Department of Education is critical. OERI must appoint an administrative task force designed to improve the coordination of OERI's education research, development, and dissemination function with those of other Federal agencies.

Despite repeated calls for greater coordination of the Federal investment in education research and development, much remains to be done to fully maximize our national efforts.[57] The authorizing legislation directs OERI to "... promote the coordination of educational support within the Federal Government...." [58] However, ERIC, the educational research and information clearinghouse system designated to receive all relevant government documents, is often bypassed by many programs in the Department of Education as well as other Federal agencies responsible for educational research. Subcommittee hearings additionally revealed that meaningful cooperation and communication among the various agencies and departments responsible for educational research is rare. It is dismaying, for example, that although 20 percent of the active military is either being taught or is engaged in teaching and that the military spends up to five times more than the civilian sector on educational technology, ERIC is not organizationally linked to receive any military documents pertaining to educational improvement.[59] A recent survey indicated that 33 of the 84 non-ERIC, education-related clearinghouses (most of which are federally-supported) do not provide documents to ERIC.[60] The Congressional Research Service has identified at least 11 governmentally-supported databases from which scientific and technical information is disseminated but not placed within the ERIC system (see Appendix B).

The Department of Education operates over 210 different programs. However, they are seldom connected to OERI's key research, dissemination, and evaluation mission. Research and dissemination activities carried out by the Regional Educational Laboratories and the National Educational Research Centers are not connected to the dissemination activities of programs such as the Chapter One Technical Assistance Centers, the Office of Bilingual Education of Minority Languages Affairs, or EHA's Early Childhood Technical Assistance Centers. This failure to effectively coordinate research activities prevents the Department of Education

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[57] See "Educational Research: Prospects and Priorities," Appendix 1 to the Hearings on H.R. 3606 and Related Bills to Create a National Institute of Education, before the Sub committee on Select Education, 11-36; and also Hearing to Extend the Authorization of Appropriations for the National Institute of Education, Testimony of Richard L. Turner, February 1980.

[58] P.L. 96-88 (d)(1)(E), Department of Education Organization Act of 1979.

[59] United States Congress, Office of Technology Assessment, *Technology and the American Transition*, 242; United States Congress, Office of Technology Assessment, *Power On! New Tools for Teaching and Learning*, 1988, 164; and see testimony of Judi Conrad, Chair-Council of ERIC Directors (COED), before the Subcommittee on Select Education, April 21, 1988, 117.

[60] Susan Klein, "How Can the Federal Government Help Education-Related Clearinghouses?" *Knowledge and Society: The International Journal of Knowledge Transfer*, Vol. 3, Fall 1990.

from utilizing the fruits of research to improve practices within its own programs.

The lack of communication between OERI and other executive departments may have been justified in the past as an inevitable by-product of bureaucratic inertia, but in the present climate of a Presidential commitment to the National Education Goals, failure to coordinate at the highest levels is unacceptable. The drafters of the February 25, 1990 communique on the National Education Goals reinforce this need for coordination: "[Without a] concerted effort on the part of every sector and every citizen to improve dramatically the performance of the Nation's education system . . ., these goals will remain nothing more than a distant, unattainable vision." [61]

Small scale initiatives, such as the Federal Interagency Committee on Education (FICE), which was proposed when the Department of Education was founded, cannot hope to accomplish what is needed.[62] These efforts fail because interagency coordination is viewed statically as periodic communication between agency heads around certain topics of mutual interest. An internal administrative task force will need to examine creative solutions that force greater coordination upon all aspects of what should become a comprehensive, interactive system. Such possibilities might include innovative cross-coordination mechanisms that would allow both labs and centers to work together with local school districts on high priority problems. Regional conferences that bring together State and local educators, as well as lab and center staff, to develop an action agenda around such problems as dropout prevention, must be considered.[63]

Another option is to require the exploration of linking the Department of Education's Office of Planning, Budget and Evaluation (OPBE) with relevant researchers within OERI and the labs and centers. OPBE collects a vast amount of data concerning the functioning of vital Federal programs such as Chapter One. There must be a more interactive mechanism through which program data can be analyzed and assessed so that modifications of the program can be made prior to the issuance of a final report or evaluation.[64] Moreover, the research community must have a greater hand in shaping the kinds of demonstration programs that are funded and a greater say in how those programs are evaluated and disseminated.

In 1990, the Congressional Research Service examined the Federal education authority for research, development, dissemination, and evaluation and identified 67 activities of which an overwhelming 73 percent had no requirement for coordination. Furthermore, though a final product was required in all 67 activities, 33 percent of them did not specify the recipient of the resultant products.

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[61] "Text of Final Summit Statement Issued by President, Governors," *Education Week*, October 4, 1989.

[62] The FICE was established under P.L. 96-88. See also *Power On!* 181.

[63] Broad topics, such as dropout prevention, could provide opportunities to explore some of the promising research approaches affecting "at-risk" youth, K through 12.

[64] L. Leviton and R. Boruch, "Contributions of Evaluations to Education Programs and Policy," *Evaluation Review*, 1983, 563-598.

The lack of internal coordination within the Department of Education is reflective of OERI's broader inability to communicate with other Federal departments that conduct educational research, development, evaluation, and dissemination. Some of the best work in this area is carried out by the Department of Defense, the Department of Labor, and the Department of Agriculture. The great strides made by the military in using computer-assisted instruction for basic skills training have not been well exploited. The Department of Agriculture provides a superb model for the delivery of educational services in non-traditional environments to a wide range of learners (those who attend 4-H clubs; community-based cooperative extension programs; and the USDA Washington, DC-based graduate school). The Department of Agriculture, through its Cooperative Extension Service, also demonstrates how a Federal agency can utilize research knowledge to respond to local district informational needs. The Department of Labor, through the Job Training Partnership Act (JTPA), has identified a number of exemplary programs for serving those with multiple barriers to employment. Many of the outstanding programs could be utilized in teaching basic skills through programs in cooperation with businesses, unions, and other employment training providers to a diverse range of students and workers who are traditionally underserved.[65]

Existing research—developed by the Department of Energy (in math and science skills), the Department of State (in foreign language skills), the Department of Health and Human Services (in early childhood education), and the National Institutes of Health (in cognitive learning)—needs to be considered by OERI as springboards for further research and development. OERI needs to make new efforts to coordinate what has already been learned and exert leadership for the purpose of utilizing the educational materials of other Federal agencies for school improvement and lifelong learning.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must require that regular channels of communication (workshops, teleconferences, forums, etc.) be established between OERI, Compensatory Education Programs, and the Chapter One Technical Assistance Centers.
2. OERI should establish an administrative taskforce to inventory and review existing education-related R&D of other Federal agencies.
3. OERI must assist in the dissemination of model approaches for States conducting programs under the Job Training Partnership Act (JTPA), the Adult Education Act, the Vocational Education Act, and the Family Support Act, and other programs that provide for remedial education or basic skills training.

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[65] United States Department of Labor, Office of Information, *News*, April 3, 1989.

9. OERI must more effectively coordinate its research and development efforts with the National Science Foundation.

One of the most ambitious of the National Education Goals calls for the Nation to be first in math and science by the year 2000. Evidence indicates that we are currently far short of this target. The scores of our students are among the lowest in science across a variety of grade levels when compared to other industrialized countries.[66]

America faces a shortfall of scientists and engineers by the year 2000. We can meet these shortfalls only by utilizing all of our talent, especially those traditionally underrepresented.[67] Minorities, women, and individuals with disabilities are still underrepresented in science and engineering. African-Americans, for example, comprise only 2 percent of all employed scientists and engineers, even though they are 12 percent of the U.S. population. Hispanics, America's fastest growing minority group, comprise 9 percent of the population, but only 2 percent of all employed scientists and engineers. Although they account for 43 percent of the population, white women comprise only 10 percent of employed scientists and engineers. An estimated 22 million Americans of working age have some physical disability, yet only 7.2 million of these are employed.[68] By the year 2020, two-thirds of the work force will be comprised of women, minorities, and people with disabilities. Therefore, the need for preparing these individuals in science and engineering becomes a nationwide workforce issue. "The Nation's leadership in science and engineering cannot be maintained, cannot survive . . . unless our education pipeline receives the help it needs to create a more diverse group of world-class scientists and engineers."[69]

During a congressional hearing, Robert T. Jones, Assistant Secretary of Labor for Employment and Training, testified that, "The average high school student in Japan outperforms the *top 5 percent* of America's students in a test of math and science."[70] Another source reveals that in mathematics, only 1 in 4 African-American and Hispanic 17-year-olds performs at the junior high level; our high school students scored 9th in physics, 11th in chemistry, and last in biology when compared to students of other countries.[71] In

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[66] CRS, *National Educational Goals: Where Are We?* (Washington, DC: CRS 90-169 EPW) 11.
[67] The Task Force on Women, Minorities, and the Handicapped in Science and Technology, Final Report, "Changing America: The New Face of Science and Engineering," December 1989, 2.
[68] *"Changing America"* 20-28.
[69] U.S. House of Representatives, Committee on Science, Space, and Technology, Hearing on Women, Minorities, and the Disabled in Science and Technology, Testimony of W. Ann Reynolds, former chancellor, California State University, 1988, 14.
[70] Joint Economic Committee, Hearing on Crisis in the Workplace, Statement of Robert T. Jones, Assistant Secretary of Labor for Employment and Training, U.S. Department of Labor, October 31, 1989, 9.
[71] International Association for the Evaluation of Educational Achievement, *Science Achievement in 17 Countries: A Preliminary Report* (Oxford, England: Pergamon Press, 1988).

reviewing similar international comparisons of science achievement, Professor James Coleman made the following observation:

> The United States is, in science achievement in elementary and secondary school, virtually outside the range of science achievement in other developed countries whose children were tested. . . . This is a problem which, if allowed to persist, could easily turn the United States from the most affluent Nation in the world into a less developed country.[72]

It is estimated that the Department of Education administers over $2 billion in mathematics and science education activities;[73] yet, the Department excuses its inability to accurately identify and highlight existing activities and expenditures in mathematics and science by continuously citing that it is not organized by content areas. In December, 1989 the Department established a Taskforce on Mathematics and Science Education. Organized by Under Secretary Sanders and chaired by the Director of OERI, its major responsibility was to survey the Department to catalogue program activities and related funding in mathematics and science. According to the Taskforce, "It is not possible to provide a comprehensive description of the Department's mathematics and science activities or to estimate with great accuracy the amount of resources being put into mathematics and science. . . . There is no easily identifiable means [of] address[ing] common mathematics and science concerns or even to share information. Nor are there enough contact points that might be expected to be knowledgeable of science and mathematics activities."[74] The Taskforce concluded that the Department, in order to fulfill its leadership role in meeting the National Education Goals, must develop a comprehensive plan for addressing needs in mathematics and science education.

The Department of Education must support the R&D efforts of OERI in these areas by developing a strong coordination policy between it, the National Science Foundation—the major entity responsible for science education—and other Federal agencies involved in the improvement of mathematics and science. The importance of a coordinating policy with the National Science Foundation (NSF) cannot be overemphasized.

NSF, an outgrowth of the contributions made by science and technology during World War II, was established under the National Science Foundation Act, signed into law in 1950 by President Harry S. Truman, to promote and advance science and engineering across all disciplines and to evaluate the scientific research programs undertaken by agencies of the Federal Government. Through grants and contracts to colleges and universities, and other research institutions, NSF funds research in all fields of science and engineering. It also awards research graduate fellowships in mathematics, science, and engineering education to universities, colleges, academic consortia, nonprofit institutions, and small businesses. The Foundation conducts a variety of innovative projects in teacher pre-service and in-service education, and supports the development of instructional materials and the application of advanced technologies to classroom activities.

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[72] Oversight Hearing on OERI, Testimony of Dr. James Comer, April 20–21, 1988, 45.
[73] *Report of the U.S. Department of Education Taskforce on Mathematics and Science Education to Under Secretary Sanders*, August 1990.
[74] *Report of the Taskforce.*

During a 1988 Senate Appropriations Committee hearing to review NSF's funding, concern was expressed about the quality of textbooks and other teaching materials funded through its grant process. "Despite a substantial Federal investment in the creation of innovative science teaching tools," the Committee felt that the materials were substandard due to "in part, institutional failure to objectively evaluate the strengths and weaknesses of teaching materials once they have been developed." As a result, the National Science Foundation was directed to submit to the Committee a report "setting forth the steps . . . being taken to evaluate the quality of teaching materials and to promote the use of materials of superior quality. . . . [The] report should also suggest . . . additional steps to be taken to improve [their] evaluation and dissemination process." [75] In 1989, the Committee directed the Foundation to provide a follow-up report, concluding that it was too early to determine the effectiveness of materials prepared as part of NSF's Publisher's Initiative Program to rectify the previous shortcomings. They particularly wanted the Foundation to complete the development and field testing of the Publisher's Initiative Program and to develop a dissemination plan (including networks available through the Department of Education) to distribute these materials more effectively.[76]

Consequently, NSF has entered into discussions with the Department of Education to explore ways by which both agencies can cooperate in making teaching materials available to school systems through the National Diffusion Network (NDN), the Eisenhower Program, Chapters I and II of the Elementary and Secondary Education Act and other national grant and distribution programs of the Department. We applaud these efforts as a small step toward correcting NSF's greatest deficit—its lack of a dissemination system. OERI, with its network (ERIC, the Regional Laboratories, and the National Diffusion Network) and extensive experience and knowledge in the area of dissemination, can provide the structure for the Nation's most comprehensive educational information dissemination system. Although NSF has cited disappointment with NDN's ability to widely distribute for adoption their new methods and materials,[77] we would discourage NSF from developing its own dissemination mechanism, and urge them to invest in NDN's potential by jointly developing a plan which would adequately address their needs.

The efforts presently under way by the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) to coordinate the Department of Education, NSF, and other Federal agency initiatives in mathematics, science, and engineering should be formalized with an interagency coordinating policy.

The Nation's priority to be number one in mathematics and science by the year 2000 cannot be realized unless we invest in strengthening existing structures that provide the elements needed to improve mathematics and science education. The importance of

[75] U.S. Senate, Senate Appropriations Committee, Subcommittee on VA, HUD, and other Independent Agencies, Hearing of December 10, 1988.
[76] U.S. Senate, Appropriations Committee, Subcommittee on VA, HUD, and Independent Agencies, Hearing of 1989.
[77] Pre-College Teaching Materials, II, 23.

the "centrality of science and technology to the Nation's future, and of the necessity for transforming the schools in order to produce scientifically literate citizens and a steady supply of scientists and engineers, must be stressed over and over again." [78]

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. Congress must affirm its commitment to the development of a scientifically literate citizenry by supporting the efforts of the Department of Education in its quest to restructure its mathematics and science education activities.
2. Congress must support OERI's R&D efforts in the areas of science and mathematics.
3. Congress must mandate systematic coordination between all Federal agencies which have mathematics and science education initiatives.
4. Congress must ensure the implementation of initiatives to recruit and retain minority scientists, engineers, and teachers. Consideration should be given to the creation of regional teacher centers that have as their explicit focus the nurturing of minority youngsters whose high school records indicate strong potential in the area of mathematics and science.
5. The National Diffusion Network must expand its program capacity to include proven science programs.
6. The Department of Education should encourage increased dialog between OERI and the coordinators of over 210 categorical programs (i.e., Chapter I and the Eisenhower Mathematics and Science Program) in order to maximize the effectiveness of the programs by integrating the dissemination of relevant research information at each appropriate level (Federal, State, local).

[78] Dr. F. James Rutherford, "Reflections on the Federal Role in the Reform of Science Education," Unpublished Paper Prepared for the Carnegie Commission on Science, Technology, and Government, February 9, 1990, 19.

10. OERI must commit to research on the wealth of effective educational practices developed and/or advanced by special education research and devise a system whereby these practices may be transferred to general education and made available for more widespread applications.

The National Education Goals indicate a commitment to raise the educational achievement of all children, regardless of their abilities. This objective of educating *all* children can be greatly enhanced by bridging the divide that currently separates special education from general education. OERI must lead the way in applying special education research findings to general education settings.

Fundamental to special education are three statutory provisions—individualized education programs, nondiscriminatory and multidisciplinary assessment of educational needs, and education in the least restrictive environment—which allow schools to maximize the educational development of students with special needs. The research that has been guided by these provisions has yielded findings applicable to the mainstream of American education. For example, the individualized education program, customized to the needs of each student taking into consideration the learner's strengths, weaknesses, and learning style and modalities, provides a model for meeting the needs of a diversified student population.

Special education research has made many contributions to the educational knowledge base, primarily in the form of alternative teaching methods for remediation in various subject areas, as well as analyses of the interactions between learner differences and various subject matter. A variety of interventions have been designed based upon careful, reliable research to improve the performance of "special populations," i.e., those children who have needs beyond those traditionally accommodated in a regular classroom. Increasingly, critical considerations have been given to assessment methods and placement alternatives within general education settings. The past 10–15 years have seen a proliferation of findings—potentially beneficial for a wide range of student populations—in such areas as assessment (e.g., curriculum-based assessment, dynamic assessment); instruction (cooperative learning models, strategies instruction, metacognitive interventions, reciprocal teaching); curriculum (social skills, early intervention); and management (behavior modification, classroom management).

To date, the most influential of these interventions has been the Perry Preschool program based on the premise that early childhood intervention could improve the intelligence, aptitude, and academic performance of disadvantaged youth. One of the original grants for this study, using students in special education classes, was funded by the research division of the Office of Special Education Programs. This project, which helped to spawn the nationwide

Headstart program, demonstrated long-term positive effects in the areas of education, employment, and social responsibility.[79] Other special education innovations are based on the premises that all children can learn, that early intervention programs can enhance that learning, and that educational resources are correlates of student performance. OERI must develop a systematic way to: review special education interventions and policies; ferret out the most promising; and place them in the National Education Treasure Chest to make them readily available to local and State education agencies.

Two offices within the Department of Education—special education and compensatory education—serve different target populations, yet share a generic school issue i.e., the ability to accommodate learners with diverse needs in the classroom. In addressing this issue, the research and development efforts of these two programs have been quite different. Special education has active research, development, and dissemination components, while compensatory education research is tied to Chapter One evaluations and fragmented within other general education research and development activities. Thus, those who provide special education services are more likely to obtain and use R&D-based information than the providers of compensatory education services.

Currently, no systematic coordination occurs between the research efforts of OERI and the Office of Special Education and Rehabilitative Services (OSERS). Within the latter office, the primary authority for research is carried out through the discretionary programs of the Individuals with Disabilities Education Act and the National Institute on Disability and Rehabilitation Research (NIDRR). This separation between general and special education research mirrors an educational system which has not fully appreciated the contributions of special education research nor fully integrated the needs of childen with disabilities into the mainstream. The unfortunate split between the two research efforts may account for the failure to adapt effective interventions developed and/or advanced by special education research to the needs of children experiencing difficulties within the regular education setting.

OERI must develop better mechanisms for sharing research findings between general education and special education, targeting all children who are underachieving without threatening the integrity or resources devoted to either office. Innovative utilization of special education research findings can help nullify the negative outcomes experienced by many minority children, children with disabilities, and children who speak different languages.

Presently, the main vehicles for the dissemination of special education research findings are the ERIC Clearinghouse on Handicapped and Gifted Children and the work of independent educational researchers who receive Federal special education funding with broad interests that span the boundaries between regular and special education. Other means of special education research dissemination to general education include contracts on models for

[79] John R. Berrueta-Clement, et al., "Changed Lives: The Effects of the Perry Preschool Program on Youths Through 19," *Monographs of the High/Scope Educational Research Foundation*, No. 8 (Ypsilanti, Michigan: High/Scope Educational Research Foundation)

educating children with disabilities in the regular classroom setting and teacher training efforts associated with these models.

The Office of Special Education Programs (OSEP) has an excellent track record for getting research findings to practitioners and for conveying field-generated concerns to researchers. This dissemination efficacy is facilitated by a system of interconnected networks that—through statutory mandate and regulatory policies—maintain ongoing communication and promote the transfer of information among researchers, administrators, and practitioners. OERI should emulate OSEP in this regard by establishing more links between its research component and the service-oriented components of various Department of Education Offices (e.g., the Chapter One program in the Office of Compensatory Education).

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must coordinate with OSERS to exchange promising research findings, programs and products and fund research to assess the use of these with various special populations (e.g., at-risk and mainstreamed students).
2. OERI must develop firm linkages with OSERS to foster communication and transfer of effective research findings reciprocally so that the flow of information would be expedited, as would the impact of research on educational practice.
3. OERI must develop jointly-funded research and development projects with OSERS (e.g., studies on how to increase the range of variance that can be accommodated in instructional settings; how findings of special education research can foster better accommodation of individual differences within the classroom) and synthesize and coordinate the dissemination of relevant research findings.

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11. OERI must conduct an on-going review of military educational and manpower training research in order to develop programs and practices which apply the most promising methodologies and technologies to civilian education practices.

An Office of Technology Assessment report notes that the consistently high level of military investment in research and development has produced "... a multibillion dollar inventory of training material. For example, in 1986, the Naval Training Systems Center processed more than $1.0 billion for research, testing, and development of training systems, and provided logistics support for over $3 billion worth of training material and systems in use throughout the world." [80] Despite the lack of transfer mechanisms, the military's spending advantage of 7:1 over the civilian sector has impacted civilian education, (e.g., computer-assisted instruction pioneered by the Department of Defense; instructional system design developed by the U.S. Air Force) and has clearly influenced training conducted by the private sector. It is of vital importance that this investment be maximized at all education levels. There would be a greater chance of achieving the National Education Goal for adult literacy if the military's arsenal of proven products and programs—devoted to teaching raw recruits to master basic literacy skills—could be exploited for civilian use. While the exact amount of transferable knowledge and material is unknown, there are numerous innovations which justify their application in meeting civilian educational needs.

Such an initiative is particularly urgent as we currently face a dire emergency in our inner cities. During the height of the Vietnam War, there was a manpower shortage that led the military to recruit from among young men who had not achieved mastery of *category 5 level* basic skills, [81] many of whom were from inner-city areas. The military developed an intensive training program, known as *Project 100,000*, [82] to provide this population with literacy and work force skills. Using specially adapted basal readers and teaching materials, the military was extremely successful in training 100,000 raw recruits to handle sophisticated equipment.

There is a difference between the experience of training recruits and the challenges confronting the average inner-city teacher who is faced with many poor and minority youngsters at risk of dropping out because they were unable to master basic skills by the 4th grade. Recruits have to follow orders, while students often pick and choose what, if any, instructions to follow. The Army provides training adapted to the performance of particular jobs, while teach-

[80] OTA, *Worker Training*, 259.
[81] Office of the Assistant Secretary of Defense, *Profile of American Youth. 1980 Nationwide Administration of Armed Services Vocational Aptitude Battery*, March 1982.
[82] Don Winter, "Project 100,000—The Forgotten Men of the War, *National Journal*, April 1978.

ers are interested in a variety of outcomes. Despite these sharp differences in instructional approaches and student motivation, military-sponsored research and development provides a largely untapped resource for civilian educators. For example, the predominantly passive, textbook-oriented methods which have not fundamentally changed since the nineteenth century, could benefit from the practice-oriented mode of such military instruction. New approaches involving visualization and interactivity in the performance of real world tasks pioneered by the military could provide a key source of tested alternative curriculum approaches for which there is no counterpart in the civilian research and development sector. Educational researchers should be cognizant of the power of visual learning and make efforts to review the Defense Department's use of simulators and other kinds of technologies in order to develop appropriate curriculums and programs. According to the OTA report, the military currently uses visually-based computer technology training in a wide variety of settings. The Navy, for example, "using two-way compressed video delivered via satellite . . . has used teleconferencing for training" [83] at great cost savings and with enhanced achievement. Simulators are frequently used where training "tasks are too complex or costly . . . to practice using real equipment," [84] while interactive videodisc (IVD) is used to teach basic skills in instruction in the context of map reading and navigation.

As the Cold War comes to a close and policymakers look for options that will allow us to smoothly adapt to the needs of a peacetime economy, it is particularly appropriate that we consider the development of expanded opportunities for researchers who were formerly dedicated to supplying the research and development needs of the military. OERI needs their expertise. The billions of dollars of research and development funds that were spent on preparing for war could be used to meet the challenges of educating the young men and women whose real battle in life will be economic survival as the global economy demands a more highly educated work force.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. The administration should request full funding for the Office of Technology Transfer (see Recommendation 7) which would: (a) undertake a comprehensive inventory of available Federal training products; (b) establish a clearinghouse and dissemination program, including information from the training technology transfer offices of the various Federal agencies; (c) make grants or enter into contracts or cooperative agreements to facilitate the transfer of Federal training products.
2. The OTT should fund programs that would increase the awareness of both civilian educators and military training developers regarding the applicability of military methods and technology for civilian education uses.

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[83] OTA, *Worker Training*, 264-265.
[84] OTA, *Worker Training*, 264-265.

3. The OERI-funded Centers for Interactive Technology and Education (see Recommendation 7), should give special attention to visually based computer technology which has been developed by the Department of Defense.

12. OERI must develop a national dissemination policy that will advance the goal of placing a national treasure chest of research results, models and materials at the disposal of the Nation's education decision-makers.

The achievement of the National Education Goals will require intensive new efforts to provide high quality, research-based information to the growing numbers of people now involved in the educational reform process. The urgency and complexity of the reform movement now underway and the diversity of the audiences that stand to benefit the most from better schools and colleges—from business leaders to parents—require OERI to transform its outmoded policies and practices. Furthermore, OERI must engage in new thinking by developing a national dissemination policy to ensure that educational information is available to the Nation's education decision-makers. Judi Conrad, Chair of the Council of ERIC Directors (COED), in testimony before the Subcommittee, advocated for such a policy:

> Virtually all the components for a national education system are already in place. . . . What is missing is a policy to guide development of such a system. We need a national research information policy that defines respective roles, coordinates activities, and encourages cooperative ventures.[85]

What emerges from approximately twenty years of direct Federal involvement in educational dissemination is the importance of local commitment to school improvement and the relative ineffectiveness of imposing change from the top down.[86] Studies additionally reveal that those who have the responsibility for implementing policy often feel overwhelmed by a surplus of information and have little time to distinguish effective innovations from those of doubtful validity.[87] At the same time, many can agree that those schools requiring the most radical changes are often the last to receive up-to-date and relevant information which could help make a difference.

There are few signs that the current dissemination system is equipped to deal with the importance of the above insights. Specifically, there has yet to emerge a national dissemination policy which exploits, in a coordinated fashion, the strengths of existing dissemination systems. OERI's dissemination infrastructure of 10 Regional Educational Laboratories, 16 ERIC clearinghouses, ACCESS ERIC, and the National Diffusion Network can form the

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[85] Oversight Hearing on OERI, Testimony of Judi Conrad, April 21, 1988, 405.

[86] David P. Crandall, "Implementation Aspects of Dissemination: Reflections Toward an Immodest Proposal," Paper Presented Before AERA Conference in New Orleans, April 1988, 14.

[87] C.V. Horn and B. Hetrick, "Buyers and Brokers: Information Flow in the Education Policy Community," Unpublished Research Report Funded by the United States Department of Education, Office of Educational Research and Improvement, Grant #OERI-6-86-0011, October 1987, 27-28.

basis of a dissemination system that has enormous catalytic potential for educational improvement.

In 1966, 20 Regional Educational Laboratories were created to conduct sustained programmatic attacks on educational problems by concentrating on applied research and on creating collaborative relationships with varied participants in the educational process (primarily State departments of education, intermediate service agencies, and local districts and schools). There are currently 10 Regional Labs whose general functions include:

- Identifying concerns and priorities through regional governing and advisory structures and activities which help its regional clientele define its needs
- Conducting applied research and development in pursuit of those priorities
- Providing technical assistance to its region
- Facilitating communication among various education R&D providers
- Disseminating and implementing its own products
- Promoting the use of R&D results from all sources.

While there may be other agencies which conduct education research and development, the Regional Labs are often the only entities in a region which conduct a full array of R&D functions and have regional R&D services as their primary responsibility.[88]

The Educational Resources Information Center (ERIC), established in 1966, is a nationwide information network designed to provide users with ready access to education literature. ERIC has become the world's largest and best-known educational database with over 700,000 records of documents and journal articles. It serves as a resource for educators, scholars, and an entire spectrum of education advocates from the technical researcher to the concerned parent.[89] ERIC consists of 20 entities: 16 ERIC clearinghouses, located in various parts of the country and organized according to subject matter domain; 3 support organizations (the ERIC Document Reproduction Service [EDRS], the ERIC Processing and Reference Facility, and the Oryn Press); and ERIC Central (administrators of the ERIC system, including the ERIC Director, working out of OERI). The clearinghouses serve a number of functions which can usefully be grouped into three categories:

1. Archiving—receiving, selecting, indexing, abstracting, and cataloguing documents.
2. Dissemination—getting the information in the documents to a broad range of users.
3. Synthesis, Analysis, and Production—producing specific documents (i.e., information analysis products and user service products).

Despite its many features, many find the ERIC system difficult to use. Individual clearinghouses may contain scattered information

[88] U.S. Department of Education, Office of Management, *Regional Educational Laboratories: A Service Delivery Assessment*, 1982.

[89] U.S. Department of Education, Office of Educational Research and Improvement Information Services, *ERIC Annual Report—1989: Summarizing the Accomplishments of the Educational Resources Information Center*.

on particular subject areas, (e.g., drop-out prevention programs), but do not collect this information on a systematic basis or independently evaluate the information.

At a 1987 Subcommittee hearing on the ERIC System (the first oversight hearing since its inception), Donald K. Erickson, Director of the ERIC Clearinghouse on Handicapped and Gifted Children, testified that he had:

> . . . argued for the idea that the ERIC system needed some kind of . . . central coordinating unit to conduct certain activities that the clearinghouses could not effectively carry out themselves and which, for a number of reasons, [could not] be done by OERI. [During] the deliberations of the ERIC Redesign Panel . . . members struggled with the vexing issues of system awareness, accessibility, quality control, coordination of resources, multiple audiences, [and] product development efficiencies. . . . I presented a proposed model for redesigning ERIC into a comprehensive educational information resource system using already existing supported programs: [ACCESS ERIC].[90]

In 1989 with the use of the Department's discretionary funds, OERI officially established ACCESS ERIC to provide a comprehensive outreach and dissemination program for the entire ERIC system. The Department describes it as an entity responsible for developing and making available to the public several new ERIC and education-related files; producing system awareness products, including the newly established periodical, *The ERIC Review*; and providing reference and referral services for the ERIC system. ACCESS ERIC is also responsible for assessing and evaluating ERIC products and services.[91]

The National Diffusion Network (NDN) was developed in 1974 with a mission to find programs that work and bring them to the attention of school districts in search of solutions to their problems. Thus, NDN functions as a school improvement process which: (1) identifies programs that are exemplary; (2) distributes them throughout the country; (3) brings them to the attention of educators who are interested in improving their education programs; (4) provides schools with several programs from which to choose; and (5) provides training and follow-up technical assistance for those who decide to install a particular program.[92]

The NDN has historically concentrated on efforts to replicate effective programs for students of average ability in suburban areas. They do not collect information on effective practices, products or policies. Thus, the cupboard is virtually bare for school superintendents or teachers looking for effective ways to make a difference in urban schools.

OERI's recent initiative to develop a computer network to enable the major institutions which it supports (i.e., Labs, Centers, ERIC, and NDN) to share information among themselves and with OERI staff is long overdue. OERI has also implemented a toll-free electronic bulletin board system designed to provide individuals and organizations interested in education with access to research and statistical findings. The expansion of these systems is needed in building a national education treasure chest to advance the synthesis of

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[90] Oversight Hearing on OERI (The ERIC System, July 30, 1987, 100-101.

[91] U.S. Department of Education, OERI, Information Services, *The ERIC Review*, Vol. 1, 1990.

[92] United States House of Representatives, Subcommittee on Elementary, Secondary, and Vocational Education, Hearing on the National Diffusion Network Act, Statement of Lee Weckline, Director, National Diffusion Network, June 9, 1982, 6.

the information collected and the efficient and effective dissemination of research results, models, and materials to a wide variety of end-users.

The treasure chest would become the dynamic core of the National Education Dissemination System which would include the ERIC bibliographic database, special focus clearinghouses, libraries, and eventually public and private telecommunications networks and mass media public information activities sponsored by public or private sources. In constructing such a system, OERI should establish specialist panels (expert researchers, as well as practitioners knowledgeable about the research implemented in classrooms) to be the "gatekeepers" of the treasure chest, ensuring quality control as well as comprehensive coverage. Based on their assessment of the research literature and existing evaluations, these panels would advise OERI on research, programs, and models that should be entered into the centralized database accessible to practitioners. The treasure chest is a metaphor for the total universe of educational information relevant to school improvement. Its physical embodiment should be in the form of an interactive, computer-based network (the National Education Dissemination Network), housed in the transformed Department of Education Research Library (the National Library of Education), with the following responsibilities:

1. To enhance the links between the producers of education research information, the stakeholders, the intermediaries, and the users.
2. To provide coordinated, responsive dissemination services to all users of the network.
3. To facilitate the exchange of information and develop informal networks among the users.

A transformed OERI library has enormous potential to serve as the hub for this coordination effort, providing unique educational information and dissemination. Dr. James Rutherford, Chief Education Officer for the American Advancement of Science, advocates for a National Library of Education that can serve as a counterpart to the National Library of Medicine:

> The United States has no resource in education remotely comparable to the National Library of Medicine. In education, unlike health, the country lacks a dynamic center, an intellectual and information resource for professionals and citizens. It has no communications hub able to put schools, homes, and communities in touch with the education information they need. It has no place that has the responsibility and R&D mission for helping to turn America into a true information society.[93]

The National Library of Medicine has, in its 154-year existence, become a worldwide resource of information. Through MEDLINE it makes a database available to health care professionals nationwide. MEDLINE not only allows individuals to call up a list of pertinent articles in minutes, but allows users to print abstracts for many of those articles at their own terminals. It is accessible at 3,500 institutions, including government agencies and commercial organizations, as well as medical schools and hospitals. In all, the National Library of Medicine has some 2 dozen databases, covering various aspects of health and disease. The Library has an ongoing program

[93] Dr. F. James Rutherford, 37.

of research grants to develop large-scale integrated information systems in academic health science centers. Grants are also awarded to develop efficient dissemination of new information. The National Library of Medicine sits at the hub of a national network of 7 regional medical libraries, 125 medical school resource libraries, and 4,000 local medical libraries.

The modest collection currently housed at OERI's headquarters in Washington, DC could become the entity that fulfills a similar function for education as the National Library of Medicine performs for medicine. Dr. Susan Klein outlined a possible set of components that such a library would contain:

Component 1—General Education Information

Federal grants information organized through a Project Management Information System (PMIS)

Component 2—High Quality R&D Information

High quality general research and curriculum information (ERIC contents plus as much book, audio-visual, and computer software as possible)

Component 3—Promising Programs, Products, Policies, and Practices

Model programs (including demonstrations). All must meet appropriate criteria for quality.

Component 4—Identification, Synthesis, and Interpretation of Worthy Research and Evaluation Findings

Consensus-based or generalizable research findings/principles/syntheses and exemplary interpretations of research.

Component 5—Effective Programs, Products, Policies, and Practices

In addition to passing a review for effectiveness and high quality, there would be procedures to collect continuous information on how varied innovations work in diverse situations.[94]

In addition to the National Education Dissemination Network, OERI must identify other dissemination strategies needed to meet the needs of today's education institutions. Among them should be ones that have the most promise of significantly improving practice in the poorest school districts which contain the children most at risk for educational failure. The improvement of student learning has always been a key congressional priority, but the above listed instrumentalities have been slow in developing innovative ways to penetrate the host of bureaucratic structures and conditions that block improvement in some of the Nation's least effective schools.

There is an urgent need to develop new strategies that are based on models drawn from outside the education research field. One possible example is drawn from the agricultural extension "county agent" system which transferred productive agricultural ideas and technologies to farmers least exposed to new knowledge.[95] Analo-

[94] Dr. Susan Klein, Office of Educational Research and Improvement.
[95] *Extension in the Eighties: A Report of the Joint USDA Committee on the Future of Cooperative Extension*, University of Wisconsin at Madison, May 1983.

gizing from this example would mean that highly trained educational researchers—with practical experience with the realities of the classroom and who are also familiar with the neighborhoods from which the students are drawn—would operate a support and assistance program for policymakers, parents, business leaders, community activists, principals, teachers, and others seeking to foster constructive educational improvements.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must develop a national dissemination policy.
2. The Department of Education must require, as part of its contractual agreements, that all federally-funded research products become a part of the ERIC collection.
3. OERI must appoint specialist panels in a number of key areas (research and development involving educational equity, as well as each of the six National Education Goals). Formation of such panels will trigger the planning process for the development of the National Library of Education.
4. OERI must develop appropriate criteria for assessing quality programs, products, policies and practices. The office should additionally develop models for collecting subsequent evidence of quality and effectiveness of such programs. (Some of this cross-cutting methodological work in evaluation is described in Recommendation 4.)

13. In order to guarantee the continued infusion and utilization of research and development results, OERI must establish a responsive and interactive delivery system for research, development and dissemination (similar to the original agriculture extension programs of the land grant colleges).

Across the Nation there is a need for educational improvement in all of our schools. The best must be assisted to become better and our worst school systems must be saved from total collapse. Among the numerous new policies, procedures and practices needed to bolster school improvement efforts is the need for a component which guarantees an interactive and responsive delivery system for research, development and dissemination. Such a system must eventually serve all school systems; however, there is a need for an intensified effort to be launched immediately in the Nation's poorest school districts. A District Education Agent Program which speedily provides high quality, useful information and technical assistance will be vitally necessary to promote the increased participation of parents, business and community leaders in partnership with teachers and education leaders as they determine the future of their schools. An "Agent" to channel feedback and assist with the mobilization of "America 2000 Communities" is an essential ingredient. As Dr. Paul T. Hill of the RAND Corporation testified:

> Urban school improvement requires a broad community effort, led by business and community groups that in another era redeveloped the downtown or rebuilt the city's economic base. Coalitions led by CEO's, elected officials, clergy, neighborhood and anti-poverty group representatives, and college presidents have started a revolution from above, uniting to make education the No. 1 civic priority. School boards, administrators and teacher leaders still have important roles to play. But the days are gone when educational policy could be created solely in negotiations among the school board and its employees.[96]

Dr. Arthur Wise, Director of the RAND Center for the Study of the Teaching Profession and Chair of the American Educational Research Association's Government and Professional Liaison Committee, testified that, "We really do not have a good way of charting on a systematic basis what is going on in American education so that we can learn from these natural experiments that occur and then can share information more broadly. It is all trial under fire, trial and error." [97]

Given our Nation's dire educational needs, the present piecemeal approach of OERI will never have a significant impact. The fragmentation of the dissemination system and the haphazard coordination between the National Research Centers, the Regional Laboratories, the ERIC bibliographic database, and the National Diffusion Network causes effective programs, materials, and prac-

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[96] Oversight Hearing on OERI, Statement of Dr. Paul T. Hill, September 14, 1989, 72.
[97] Oversight Hearing on the OERI, Testimony of Dr. Arthur Wise, October 26, 1989, 83.

tices to easily be overlooked (see Recommendation 12). Additionally, at the local level there is no one available on an ongoing basis to see that communities most in need of specific kinds of research, development, and dissemination assistance are helped. There is often the need for some intervention agent to guide the application of a tested, effective remedy for a problem which can be solved. The Subcommittee received testimony which reiterates this problem:

> The average third grade teacher or average fifth grade teacher does not know what the research has uncovered, and the researchers in general do not go into the classrooms of our Nation to work with the teachers, so what we need here clearly is better articulation between the researchers and the information that they uncover, and the persons who are on the firing line who are supposed to implement those programs.[98]

Most teachers on the classroom "firing line" do not believe that research and development can assist with their everyday recurring problems of discipline, excessive paperwork, outreach to homes and the community, or that such new information can facilitate instruction, reduce student boredom and supplement the knowledge being transmitted in the classroom. Nevertheless, there are models, methods, techniques and technology which already exist to assist with the problems listed above.

A research, development, and dissemination delivery vehicle similar to the system developed by the United States Department of Agriculture should replace the occasional and episodic involvement of OERI (see Appendix C). The agriculture extension service has been credited with playing a "major role" in the U.S. "agricultural revolution." [99] "It is impossible for anyone to speak 10 words about diffusion without two of them being 'agriculture extension' . . . In many ways, it constitutes the defining metaphor for technology transfer." [100] American agriculture was transformed by the steady interjection of effective research and development practices and, as a result of the marriage of theory, engineering and practice, became the model for the world. A similar research, development, and dissemination approach could achieve equally astounding results for American education.

At the risk of exhausting the metaphor, a more detailed description of the delivery system being proposed might compare it to the "drip irrigation" technique so successfully popularized by Israeli farmers. The steady application of the benefits of research and development in economical doses that are appropriate for the problem is the desired outcome. District Education Agents (similar to the "county agents" utilized by the Department of Agriculture) are key to this more direct approach. Many of the organizational and human engineering techniques pioneered by the county agents should be thoroughly examined for use in the dissemination of education research and development results.

Although there are many differences between agricultural and educational research technology transfer, there are significant areas of similarity:

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[98] Oversight Hearing on OERI, Statement of Faustine Jones-Wilson, April 20, 1988.
[99] Everett M. Rogers, "The Intellectual Foundation and History of the Agricultural Extension Model," *Knowledge: Creation, Diffusion, Utilization*, June 1988, 492.
[100] Rogers, 493.

1. Both endeavors have an enormous amount of complex research information that needs to be translated to practitioners in non-technical language and adapted by knowledgeable experts to practical settings.
2. Client participation (in identifying local needs and in program planning, evaluation, and feedback) is key to solving both agricultural and educational problems.

Education, in contrast to agriculture, has been subject to a greater amount of faddism. Innovations are frequently started, but even if exemplary, may not come to the attention of the most relevant users and may be heavily dependent for their survival on one or two people. In agriculture, county agents have been successful in ensuring that the change process is carefully nurtured and monitored while specialist personnel ensure that the resource base is of high quality and responsive to user needs.

Analogizing from agriculture's successful experience utilizing research to assist in the change process, the following structure for a responsive and interactive delivery system is proposed:

- A *Bureau of Education Extension* similar to the Department of Agriculture's Cooperative Extension Service (CES) must be created within OERI to administer the District Education Agent Program (DEAP) and to provide specialist assistance.
- *Learning Grant Institutions (LGI's)* must be designated and awarded grants which will serve as the information base for each DEAP. Although similar to the land grant colleges and universities, these LGI's may also be other non-profit education institutions such as the National Research and Development Centers, the Regional Laboratories; or even profit-making enterprises specializing in education.
- *District Education Agents* will be appointed by the Learning Grant Institutions in consultation with State Departments of Education. The District Education Agents (DEA's) must function as independent change agents providing information, channeling responses and feedback, organizing and coordinating a community-wide effort to improve education. In "America 2000 Communities" the DEA shall be responsible for the mobilization of all groups and organizations.
- *Research and Development Districts* shall consist of parts or all of the participating congressional districts and territories. A Research and Development District (RDD) shall comprise no less than 250,000 residents. The remainder of a congressional district might be utilized as a control for the educational improvement experiment. Where entire congressional districts are designated, such RDD's shall be considered synonymous with "America 2000 Communities."
- *America 2000 Communities*, which are proposed in the President's legislative initiative, are congressional districts which must adopt the National Education Goals, devise a plan for reaching them, create a report card for monitoring their progress and demonstrate a commitment to create and support a "New American School."
- *An Intensified District Education Agent Program* shall be established in recognition of the crisis facing the schools in the

Nation's poorest congressional districts. In addition to the basic program and resources projected for all congressional districts, the 50 poorest CD's located in rural and inner-city areas with some having predominately bilingual populations, shall be eligible for emergency assistance for activities involving non-recurring expenditures. The credibility and effectiveness of the District Education Agents will be greatly enhanced by such a capability to address pressing problems immediately. The Intensified District Education Agent Program shall be administered by the Learning Grant Institution.

Consideration of the optimum practical size for Research and Development Districts required an examination of the agriculture extension model where a land grant university was designated for each State and a county agent for each county. The detailed replication of this model is not the most desirable approach for the following reasons:

- The States vary greatly in size, demographics, distance of universities from the poorest communities, structure of the policy-making body responsible for education, etc.
- Counties vary greatly in size, demographics, and their relationships with school districts.

On the other hand, congressional districts are the single unit of the Federal Government which have nearly equal populations. The President's legislation has also chosen the congressional district as a basic unit for mobilizing to achieve school improvements. Since the District Education Agents will be responsible for promoting total educational improvement for all age, income, formal and non-formal groupings within the population, the target area size should be determined first by the number of residents. School district boundaries, public college zones, library service areas, job training program eligibility boundaries, etc. are important but secondary considerations. The goal is the improvement of education for all persons from the cradle to the grave.

For each "R&D District" there shall be a "Learning Grant Institution" and its appointed "District Education Agent." Departing from the agricultural extension model in this case, the operative, the "District Education Agent" and the backup resource, the "Learning Grant Institution," shall both be in equal proximity with the target population.

District Education Agents, with the support of their base Learning Grant Institutions, would have the following major functions:

- To assemble parents, students, teachers, education leaders, community leaders, labor leaders and business leaders for the purpose of adopting the National Education Goals, additional local education goals and a plan for achieving the adopted goals and to assist this group in mobilizing to achieve their objective.
- To use the instruments and agencies of the Federal Government to disseminate useful information as speedily as possible.
- To channel the responses and feedback of the practitioners back to the research and development community.

- To identify gaps in the Federal "treasure chest" of information which would result in the launching of new initiatives to address specific problems.
- To track past Federal grants to the district and pinpoint reasons for success or failure and to track existing Federal grants and assist in improving their effectiveness.
- To channel the resources of the Learning Grant Institutions and other Federal R&D entities into the district in the form of information, materials and technical assistance.

As stated above, there is an immediate need to launch an "Intensified District Education Agent Program" within the 50 poorest congressional districts. The correlation between poverty and poor student performance has been well established. Localities with high concentrations of such at-risk students can not wait until the year 2000. In concert with the Institute for the Education of At-Risk Students, the Intensified District Education Agent Program will promote immediate reforms and offer resources to support such proposals. The targeting of the demonstration programs of the Institute can best be achieved through collaboration with the District Education Agents.

In addition to funds for non-recurring emergency expenditures, special allocations should be set aside for the 50 demonstration districts to allow them to receive increases in funding for any two of the following certified Federal programs. These certified options would serve as incentives and rewards for meeting certain education goals and timetables.

- Increased Chapter I funding.
- Increased Head Start funding.
- Special funding for a community-based TRIO program.
- Special Pell Grant allocations.
- Accelerated Designation of America 2000 Experimental Schools.

The 50 "demonstration" congressional districts would choose the two options most suitable for the district capability. For example, poor areas lacking adequate physical facilities can not use additional Head Start funds until new buildings are made available. On the other hand, areas with a large percentage of high school students would welcome special funding for a TRIO program to counsel students.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. A *Bureau of Education Extension* within OERI must be authorized. The Bureau must be responsible for the immediate launching of 50 District Education Agent demonstration programs in the 50 poorest congressional districts. The Bureau must simultaneously prepare for the long-term establishment of District Education Agent Programs in the remaining congressional districts and territories. The implementation and funding timetable for the non-demonstration districts shall be two years behind the demonstration districts in order to facili-

tate the applications of lessons learned among the original fifty.

2. The *Bureau of Education Extension* shall be responsible for making grants to Learning Grant Institutions for the purpose of operating District Education Agent Programs.
3. The *Bureau* shall be responsible for initiating the process for the establishment of Education 2000 Community Committees within the DEAP. Such Committees shall constitute the start-up phase for the non-demonstration congressional districts. For this purpose, the Bureau may contract with prospective Learning Grant Institutions or other non-profit agencies or private sector entities providing education-related services or with the new American Schools Development Corporation.
4. The *Bureau* shall establish ongoing liaison with Governors and State Departments of Education to facilitate consultation in the determination of Learning Grant Institutions and the appointments of District Education Agents. State Education Departments shall be responsible for the selection of independent contractors to evaluate the LGI's and the DEAP's.
5. Utilizing the data from the U.S. Census, OERI must determine the 50 poorest congressional districts as early as possible.

14. OERI must set standards, conduct assessments, and promote research and development activities which enhance the capability of States and local education agencies to improve the governance and management of their schools.

Decentralization and diversity are critical strengths of the American public education system. Despite its present shortcomings in the face of intensified global competition, this system has met many of the needs of a rapidly evolving industrialized nation. The flexibility which has allowed improvisation to burgeon should not be discarded now. However, the pitfalls of a system where 50 States exercise separate oversight authority and more than 15,000 local school boards make day to day governance and managerial decisions must not be overlooked. Assessments of the performance of these entities cannot be ignored if the Nation is to achieve meaningful educational improvements.

Educational improvements cannot be obtained by focusing on the achievements of students alone. Standards, assessments and report cards must also be established for those who govern and manage. Before we forge ahead to institutionalize the national testing of students, it would be more logical, more efficient and more just to establish a national program for the assessment of the governance and management performance of the States, school districts and local education agencies responsible for the education of students. Student achievement represents the final product of the education enterprise; however, modern managers never confine themselves to the examination and analysis of the product in order to correct the flaws in a system which produces a defective product. All units involved in the production process must be thoroughly scrutinized, evaluated and certified as working properly.

As the level of government primarily responsible for education, States may be deemed malfunctioning, failing when their funds and resources are distributed with great per capita disparities among school districts and local education agencies. Usually such disparities in distributions result in low income and minority pupils receiving less. School districts and systems which allow all of the qualified math and science teachers to be concentrated in a manner which denies the majority of their students the exposure to qualified teachers are guilty of malpractice. Too many inner-city school districts have situations comparable to the one in New York City where a recent study has shown that none of the junior high schools in districts with a majority of African-American and Latino population have math and science teachers who majored in math and science in college.

Numerous lawsuits have recently been launched to challenge deficiencies, inadequacies and suspected conspiracies in the governance and management of school districts and systems. Lawsuits also have been brought to challenge the State financing of school

districts. In Texas and Kentucky major changes have been initiated as a result of court decrees. A 1990 report, *Shortchanging Children: The Impact of Fiscal Inequity on the Education of Students At Risk*, prepared for the Committee on Education and Labor of the U.S. House of Representatives, summarizes the history of litigation in the area of school financing.

It is imperative that OERI move in a more definitive manner to restore balance to the conduct of "assessment" research by initiating, overseeing, and conducting research to pinpoint the impact of the governance and management of States, districts and systems on the performance of students. A system of "report cards" on governance and management policies and practices is long overdue.

National standards and assessments of students will yield some meaningful and useful results. There is also a strong possibility that such standards and assessments, when focused only on the testing of students, will produce a popular perception that the students bear the burden of blame for the failure of public education in America. A more scientific and more just approach to assessments must focus first on the State legislatures, State departments of education, local school boards and local educational agencies. Most of the power to achieve educational improvements is in the hands of persons who are not students. Assessment systems must be constructed with this obvious fact as a foundation.

Performance standards and assessment systems must begin with the essential foundation of financing. Report cards which compare per capita expenditures between States and per capita distributions of State assistance among districts within States are very much in order. There is a definite correlation between the level of expenditures for education and the school and later life success of children. The findings of *Shortchanging Children* provide significant illustrations of this fact:

"Texas:

Texas has one of the most extensive State-funded preschool programs in the country. According to a study by the Bank Street College of Education, more than 50,000 children in the State participate in publicly funded preschool. But, these programs are unevenly distributed. A Number of the poorest school districts in Texas—where the need is the greatest—cannot afford to participate. According to one expert, even though the State contributes a portion of the funding it is not enough to help all poor districts operate a preschool program. State funds only provide for a half-day of schooling. Poor districts are hard pressed to provide an adequate education to school-aged children and they do not have the extra dollars to make up the difference. Moreover, many of these districts lack any adequate facilities to house pre-kindergarten programs and do not have the resources to expand or improve their facilities.

The Texas court found that typical poor district schools had no foreign language, chemistry, physics, calculus, college preparatory, or honor programs. Higher expenditure schools offered an expanded curriculum. Poor school districts also did not have basic extracurricular programs, up-to-date technological equipment, teachers' aides, and parental involvement programs.

Maryland:

Statistics compiled by the State of Maryland show major disparities in the availability of preschool education based on the wealth of the district. In Montgomery County, a property-wealth district with relatively few minority and at-risk children, the enrollment in public and private pre-kindergarten for 1986 was 9,428 while the enrollment in kindergarten was 9,395 and in the first grade 9,315. In Baltimore City, a property-poor district with a very large enrollment of at-risk children, pre-kindergarten was 5,858 in the same year while kindergarten was 10,778 and first grade was 12,640. It is true that much of the preschool education in Montgomery County was provided at private schools while in Baltimore City preschool education

took place mainly in public schools. Nevertheless, the figures indicate that almost all Montgomery County children arrive in kindergarten armed with preschool experience to prepare them to learn, while in Baltimore, half the children had no such preparation.

Montana:

A study, relied on by the Montana District Court in striking down the State's school financing system as unconstitutional, found class size to be a 'critical factor' for effective individualized instruction. Wealthy districts in Montana maintain a 13 to 1 student-teacher ratio, while the poor districts have student-teacher ratios in the high twenties or low thirties. As a result, the wealthier districts can afford more independent study and more one-on-one educational programs than the poorer school districts. In addition, the kindergarten classes in the wealthy districts are much smaller than in their wealthier [sic] counterparts.

The Supreme Court of Montana found that the high-wealth districts offered a more extensive guidance counseling program, affecting even the elementary level. In some poorer high schools, however, there were only part-time guidance counselors.

New York:

In *Board of Education* v. *Nyquist* the Appellate Division found that property-poor districts find it extremely expensive to reduce class size because of the higher teacher salary costs entailed, and that property-rich districts do use their resources to reduce class sizes. For example, in 1975–76, Great Neck had a median class size of 20.79 for grades K-3, 22.39 for grades 4–6 and 23.79 for grades 7–9. Yet Brentwood, a poor district, scheduled all classes at the class maximums of 26 for kindergarten, 28 for first and second grade, 30 for third grade, and 32 for all remaining grades. Roosevelt, a poor district, in 1976–77 did not expect to have any classes with fewer than 33 students in each class. The court concluded there were important reasons, such as individual attention, classroom experience, and remedial attention, for having smaller classes.

Property-rich districts use their wealth to employ teachers with more experience and better training, according to New York's Appellate Division. As a result those teachers are also paid better. The poor districts also have a high percentage of teachers without teaching certificates. The court, relying on testimony of witnesses in the case, found that these qualities of the teachers in the wealthy districts often led to better student achievement.

New Jersey:

The ALJ in *Abbott* v. *Burke* found that students from the poorer districts attended larger elementary schools with larger classes, including kindergarten, than the wealthier district's children. At the time of trial, in property-poor Irvington more than 28 percent of the elementary schools had classes of more than thirty children in grades one through three. In Camden there were 26 percent of elementary classes with enrollments over thirty. In contrast, in South Brunswick there were no classes with over thirty students. In Moorestown, another wealthy district, the Board of Education requires an aide to be hired whenever a kindergarten class reaches twenty-one children, twenty-two in second grade, and twenty-three in third and fourth grades. The average class size in South Brunswick is twenty students.

According to the New Jersey Supreme Court's findings, the wealthy district of South Orange/Maplewood has computers available to the students beginning in kindergarten and continuing throughout a student's schooling, with computer labs at every school and advanced instruction at the high school level. In Princeton there is one computer for eight children, while in Camden there is one computer for 58 children. Camden offers formal computer instruction to only 3.4 percent of its pupils. The science education in poor urban school districts is also deficient, according to the court. For example, Princeton has seven laboratories with built-in equipment in its high schools. In contrast, the poor districts offer science classes in labs built in the 1920s and 1930s where the equipment often does not work and the supplies are insufficient. In East Orange, for example, the middle-school teachers use a science cat without water or electrical power. In addition, hands-on experience often cannot be taught or is taught without supervision.

The foreign language programs offered in the poor districts are also dramatically unequal to the wealthy districts. For example, in Montclair, a wealthy district, there are French and Spanish classes at the preschool level. A Princeton middle school requirement is that all fifth graders take a half-year of French and a half-year of Spanish. In the high schools, German, Italian, Russian, and Latin are offered. Yet in poor districts advanced foreign language courses are not offered and instruction in the basic courses generally only begins in high school.

The music and art programs of rich and poor districts are also vastly unequal. South Brunswick, for example offers music classes in kindergarten and in Montclair music class is given to preschoolers. Princeton offers an extensive music program including bands, orchestras, and small ensembles. In contrast, Camden and Paterson, poor districts, cannot offer a music course until the fourth grade. Only introductory courses are offered in high school. Camden budget constraints forced a layoff of all elementary school music teachers in the early eighties. In addition, the poor districts have inadequate space for instrumental music lessons or bands and choruses. In one poor district elementary school, the music lessons are taught in the back of the lunchroom. Art programs in the wealthy districts begin early, even in the preschool years. Art programs in poorer districts are sparse, according to the New Jersey Supreme Court. For example, in East Orange elementary schools there are no art classes and art teachers are few and limited in the forms of art they are able to teach. In Jersey City only a third of the students have any type of art class available to them.

Kentucky:

The poor districts, according to the State Supreme Court, offer programs of dramatically lesser quality than wealthier districts, particularly in the areas of mathematics, science, foreign languages, music, and art. The poor districts also are lacking in specialty programs and often do not effectively teach even basic skills." [101]

Beyond the initial area of financing there are a considerable number of additional elements of governance and management which require study. The following are a few of the basic questions which must be thoroughly explored:

- What is the optimum method of selecting education policymakers?
- Do elected State chief education executives perform better than appointed ones?
- Is there a most effective way to choose local school board members?
- What set of rules and regulations most effectively guide the conduct of school board members?
- Do local education agencies distribute funds and resources equitably among schools?
- How have school boards effectively minimized partisan political interference?
- How have school boards minimized conflicts of interest and corruption?
- How does corruption among school policymakers and managers impact on the quality of instruction?
- Is instruction adversely affected when local education agency personnel display contempt for Federal and State mandates?
- Is noncompliance with Federal and State laws a widespread phenomenon?
- Is there an optimum ratio of administrative overhead to expenditures for instruction?
- Can racist practices in schools be identified?
- Can the impact of racist practices on student performance be assessed?
- Can patterns of suspensions, expulsions and corporal punishment serve as relevant indicators of the quality of school leadership and management?

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[101] William L. Taylor and Dianne M. Piche, *A Report on Shortchanging Children: The Impact of Fiscal Inequity on the Education of Students at Risk*, (Washington: U.S. Government Printing Office, Serial No. 101-U, 1990) 35–44.

- Should the proportion of school resources committed to parent participation be considered a significant indicator in measuring the performance of school managers?
- With respect to appeals and grievance procedures for school personnel and students, what are the optimum powers for principals and superintendents?
- Are there model or optimum contractual arrangements with unions?

The collapse of public education in two New Jersey cities has illustrated the extent to which corruption will prevail if not checked. Patterson and Jersey City, New Jersey had to wait decades before the equivalent of a political earthquake produced State action to take over desperately corrupt systems of public education. These systems, and many like them throughout the country, based upon inequitable financing and widespread corruption, have doomed many minority children to "institutionalized child neglect." It is unconscionable that a civilized society allows public school situations to degenerate to the point of blatant criminality before emergency action is taken.

Is school "choice" with its emphasis on maximizing competition among schools a well tested governance strategy? Would school board members in charge of a "choice" system need special training? Would school principals operating within a "choice" system need special training?

It must be noted that school governance is not an issue that has been neglected by OERI. Research on governance has been funded by the Federal Government for more than two decades.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must review the research and the products of centers which have as part of their mission school governance and make the relevant results available to national policymakers. If necessary, OERI should work with these centers to establish new priorities to address gaps in knowledge with respect to vital questions related to the "Education Effort" being made by States, school boards and local education agencies.
2. OERI must supervise the development of a set of "Education Effort" indicators which quantify the amounts of funds committed, the fairness of the distribution of funds, the relative amounts spent for overhead versus instruction, and other similar factors.
3. OERI must sponsor the conduct of research which examines the correlation between "Education Effort" and pupil performance.
4. OERI must sponsor the conduct of research which more thoroughly examines the impact of corruption and partisan political interference on the operation of location education agencies and the subsequent performance of administrators, teachers, and pupils.
5. OERI must sponsor the conduct of research which examines the correlation between teacher education experience and credentials and pupil performance beginning with the subject areas of mathematics, science, history, English, and geography.

6. OERI must sponsor the conduct of research which examines the correlation between pupil performance and the quality of physical plants, the care of buildings, maintenance of equipment, distribution of supplies, security, etc.
7. OERI should establish a specialist panel to study the benefits which might be realized from the development and funding of an *Institute for Innovations in School Governance and Management*. Such an Institute would provide a well-coordinated research and development process with respect to such governance strategies as "Choice" and autonomous policymaking at individual school sites. Management strategies, such as James Comer's "School Development Program" which includes "Site-Based Management" and Ron Edmond's "Effective Schools" approach, would also be tested and reviewed by such an Institute.

15. OERI must conduct research to enhance the capacity of libraries of all kinds to play a major role in educational improvement and to serve as one of the primary vehicles for literacy education, continuing education, and citizenship education.

The criteria for educated citizenry in today's society has changed dramatically in the past 20 years. The flow and complexity of information is such that we must read behind today's headlines to understand the significance of ideas that are contained within computer databases, on CD-ROM, or on microfiche as well as in books. Libraries and librarians have a role to play in creating a more educated citizenry by providing the tools through which the information age can be comprehended and mastered. Libraries may serve as major vehicles for the promotion of basic literacy, information literacy, continuing education, and citizenship education. As the American Library Association's Presidential Committee on Information Literacy makes clear:

> No other change in American society has offered greater challenges than the emergence of the Information Age. Information is expanding at an unprecedented rate, and enormously rapid strides are being made in the technology for storing, organizing and accessing the ever growing tidal wave of information. The combined effect of these factors is an increasingly fragmented information base—large components of which are only available to people with money and/or acceptable institutional affiliations. . . . How our country deals with the realities of the Information Age will have enormous impact on our democratic way of life and our Nation's ability to compete internationally. Within America's information society, there also exists the potential of addressing many long-standing social and economic inequities. To reap such benefits, people—as individuals and as a Nation—must be information literate. To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively needed information. Producing such a citizenry will require that schools and colleges appreciate and integrate the concept of information literacy into their learning programs and that they play a leadership role in equipping individuals and institutions to take advantage of the opportunities inherent within the information society.[102]

Information literacy is the foundation for all other skills in a knowledge-based economy—the one skill through which all other skills and competencies can be acquired and maintained. It is, in short, knowing how to learn.

Libraries can and must contribute towards the achievement of the National Education Goals. In particular, they can provide a vital resource for individuals for whom school has not worked or does not work. These are the very same individuals who will have to be targeted if we are to achieve school readiness, a 90 percent graduation rate, and full adult literacy.

Libraries of all kinds yield greater educational value for each dollar spent than any other unit within education structures. School, higher education, public, and special libraries all have a fa-

[102] American Library Association, *Final Report of the Presidential Committee on Information Literacy*, January 1989, 1–2.

vorable cost-benefits ratio. Even greater educational efficiency could be achieved rapidly by changing the Neanderthal perception of libraries harbored by education administrators. A significant part of the answer to the problem of spiraling instructional costs can be found in new usages for libraries as institutional media centers. Despite their low unit costs, full integration of libraries into curriculum and pedagogical practices will greatly improve overall educational outcomes.

For each one of the six goals enumerated by the President and the Governors, there is a clear and effective role for libraries. They can be as potent among the activities needed to achieve goal one as they more obviously are for the realization of goal five. The aspiration of goal one that all children should enter school ready to learn can be greatly enhanced by expanding the current public library services for parents and preschool children. The literacy, continuing education, and citizenship support envisioned in goal five similarly could begin with an expansion of public library activities which already exist.

Libraries also have a very positive contribution to make to educational reform. They form an educational dissemination system capable of providing information to school administrators, students, parents, academicians, and legislators. Libraries can play a role in the expanded view of learning that has yet to be fully researched and defined. It is clear, for example, that "public libraries played a major role in the early part of the century, in assimilating children and adults into our national life." [103] Many public libraries are continuing such efforts as new waves of immigrants find their American home. However, we still know very little about what works and why. Unfortunately, to date, OERI's efforts to exploit the full educational potential of libraries have been extremely limited.

OERI's Office of Library Programs (OLP) recently has taken a more active role in working to improve the capacity of libraries to contribute to the development of a "learning society." After a period of almost complete neglect of library issues by the Department during the early 1980's, this is certainly a welcomed change, but OLP's activities have not been without problems. Where OLP has made some useful contributions—as in evaluation, assessment, and dissemination—its efforts have only barely skimmed the surface of what needs to be done. In other areas, particularly research, OLP's work has been plagued by incoherence and inconsistency.

The only coordinated Federal support for research in library and information science is the Library Training and Research grant program authorized by Title II-B of the Higher Education Act and administered by the Office of Library Programs. One third of the total appropriations for Title II-B ($976,000 in fiscal year 91) are reserved for research and demonstrations relating to the improvement of libraries; the remaining two-thirds is used for grants for training in librarianship. Over the past several years, the Department has sought to eliminate or slash funding for even this modest initiative.

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[103] Dr. Mary Jo Lynch, Director of the Office for Research, American Library Association, letter to the Subcommittee on Selection Education, 2 February 1989, 2.

Yet, even as OLP and the Department were seeking to dismantle or cut Title II-B, the research projects it was supporting with II-B appropriations, perhaps inadvertently, were documenting the urgent need for greater research in library and information science and the inability of the field to meet this challenge without strong Federal support. Through its *Rethinking the Library in the Information Age* project, OLP identified some 130 questions in 10 key issue areas which required further research.[104] The *Rethinking the Library* project also concluded that, for a variety of reasons, including the small size of the faculties of schools of library and information science, many library practitioners' lack of training in necessary research skills, and the limited resources of the professional associations, the field was not capable of taking on this burgeoning research agenda without greater leadership from the Department.[105]

In addition to compellingly refuting OLP's calls for a reduced Federal role in library research, the *Rethinking the Library* project also made some useful recommendations for changes in the current Federal role which, unfortunately, OLP also seems determined to ignore. In particular, it pointed to a need to reconfigure OLP's role away from the present piecemeal and passive approach of annually awarding a few modest grants to support small, discrete research projects toward a more comprehensive, catalytic approach of providing the core support needed to develop and sustain the research infrastructure that is now lacking in the field. This new kind of Federal approach might take a number of different forms, including:

- Establishing a Library Research Roundtable consisting of representatives of professional associations, government, and industry to identify priorities and coordinate and facilitate research and activities by the public and private sectors. The model for this approach is the Research Roundtable of the National Academy of Sciences which is partially funded by the National Institutes of Health, National Science Foundation, and the Departments of Agriculture, Defense, and Energy.
- Providing start-up funding and ongoing, core support for a private, non-profit "think tank" or a university-based research institute to conduct applied research in library and infor mation science.
- Improving the research skills of library professionals by establishing training programs for practicing librarians in research methodology and statistics and developing model curricula in research methodology for use by schools of library information science.
- Providing start-up and core funding for one or more university-based centers for research in library and information science which would conduct interdisciplinary, basic research with a focus on computerized information retrieval and processing.[106]

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[104] Office of Library Programs, OERI, *Rethinking the Library in the Information Age*, Volume I, 1986).

[105] Office of Library Programs, OERI, *Rethinking the Library in the Information Age*, Volume III, 1986.

[106] *Rethinking*, Volume III.

Through these and other mechanisms, OLP could provide the National leadership which is needed to coordinate, organize, and galvanize what are now scattered, unfocused, and inadequately funded research efforts into a stable infrastructure which can support meaningful, purposeful research in library and information science into the next century. The Department would not necessarily need to provide all or even most of the financial support for any of these mechanisms; additional support could be provided by industry, universities, foundations, professional associations, as well as by other Federal agencies like the National Science Foundation. But as OLP's own *Rethinking the Library* project made clear, this much needed infrastructure will not develop without the strong national leadership that only the Department of Education can provide.

OLP has made some helpful contributions in other areas. After a long period of relative inactivity in the areas of evaluation, OLP has resumed efforts to promote research, analysis, and ultimately, greater use of standardized output measures and other potential quantitative and qualitative indicators of library performance. Though fraught with many problems if used improperly, the development and implementation of more objective evaluative measures can play an important part in maintaining accountability and improving the quality of library services, and documenting the effectiveness and efficiency of librarians. Several of the "White Papers" commissioned by OLP for its *Evaluating Federally Funded Public Library Programs* outlined additional concrete steps OLP should now take to improve the evaluation of library programs.[107]

OLP has also made some useful contributions to expanding the dissemination of information about exemplary library programs. There is a clear need for a more aggressive Federal role in this area. "The States generally make no coordinated effort to disseminate information about innovative projects. News about some programs gets communicated at State and national conferences or in the professional literature. But there is no mechanism to validate the success of programs or to help other libraries replicate them." [108] In 1987, OLP, in conjunction with the National Diffusion Network, published a compilation of exemplary programs, *Check This Out: Library Program Models*, which were selected "for their unique qualities and replicability in other environments." [109] More recently, OLP has worked to determine why, despite their eligibility, no library programs are included in the National Diffusion Network. According to a paper commissioned by OLP, the chief obstacle to their inclusion is that many librarians are unfamiliar with the research methodology and complex evaluation design required by NDN's Program Effectiveness Panel. To remedy this, the paper recommended several steps OLP should take to increase the expertise of librarians in research methodology and to facilitate the inclusion of library programs in NDN.[110]

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[107] See, for example, Charles R. McClure, "Improving State Library Evaluation of Federal Programs," *Evaluating Federally Funded Public Library Programs*, (Washington: Office of Library Programs, OERI, 1990) 39–54.

[108] Ellen Altman and Philip M. Clark, "The National Diffusion Network: Its Potential for Libraries," *Evaluating Federally Funded Public Library Programs*, 105.

[109] Office of Library Programs, OERI, *Check This Out: Library Program Models*, 1987.

[110] Altman, 106.

Though there is a great deal which must be done to improve OLP's research, evaluation, and dissemination activities, the greater problem lies not within the Office of Library Programs but within the rest of OERI. There continues to be little recognition within the rest of OERI of the critical role that libraries have to play in making the Nation's schools more effective and in developing the "learning society" we need as we move into the next century.

OERI's backward mind-set is perhaps best symbolized by the way it has allowed the Department of Education's Research Library (which OERI administers) to deteriorate over the years. A recent audit by the General Accounting Office of the Research Library concluded that, in its current condition, the Library was of "limited usefulness" to Department personnel and other users in the education community. Due to inaction by OERI, the library has no overall collection development policy to guide its operations; such a policy, GAO explained, "is needed to make effective day-to-day decisions regarding the acquisition and preservation of materials that meet the needs" of the Library's users. Without a collection development policy, the Library's contemporary collections have been largely influenced by the individual interest of various Secretaries of Education and not the needs of its professional and policy personnel. As a result, key areas, such as vocational education and bilingual education, are the weakest and least comprehensive areas of the collection.[111] OERI has also slashed real nonpersonnel funding for the Library by 62 percent since fiscal year 80, including the funds necessary to regularly catalog and maintain the collection. Consequently, an estimated one-half of the collection is not cataloged and cannot be retrieved and used by Department personnel. In addition, another 40,000 volumes are "poorly maintained . . . improperly shelved and in need of rebinding and other preservation services."[112]

The same lack of vision that has caused OERI to let its library fall into such a state of dysfunction and disrepair has also hobbled its efforts to respond effectively to the consensus call for new educational approaches focused on promoting "information literacy." Report after report on educational reform in recent years has proclaimed the importance of reorienting our current curricula and methods of instruction to better develop the new set of skills which are required in a knowledge-based economy:

> The skills needed now are not routine. Our economy will be increasingly dependent on people who have a good intuitive grasp of the ways in which all kinds of physical and social systems work. . . . Such people will have the need and the ability to learn all the time, as the knowledge required to do their work twists and turns with new challenges and the progress of science and technology. They will not come to the workplace knowing all they have to know, but knowing how to figure out what they need to know, where to get it, and how to make meaning out of it. . . . We are describing people who have the tools they need to think for themselves, people who can act independently and with others, who can render critical judgment and contribute constructively to many enterprises, whose knowledge is wide-ranging and whose understanding runs deep.[113]

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[111] U.S. General Accounting Office, *Department of Education Library: Actions Needed to Improve Its Usefulness*, 1991.

[112] *Department of Education Library*, 1991.

[113] Task Force on Teaching as a Profession, Carnegie Forum on Education and the Economy, *A Nation Prepared: Teachers of the 21st Century*, 1986, 20.

Inevitably, libraries must be central to developing these new information access skills and facilitating the lifelong learning that has become an economic imperative. "If the challenge is to learn how to learn and how to place one's learning within a broader societal and information environment, then libraries and their resources become the logical center for such learning." [114]

Unfortunately, this realization has seemingly not yet been made by senior policymakers at OERI. Little has been done by OERI to provide the leadership needed to start bridging the gap between the library and the classroom. New initiatives are needed to identify and promote the replication of exemplary curricula models which integrate regular classroom instruction with bibliographic instruction and library-based learning. Such integrative models are needed for pre-service and in-service teacher training programs and at every educational level, from elementary and secondary through undergraduate and graduate education. Though this kind of initiative might be undertaken in cooperation with the Office of Library Programs, it is essential that leadership and participation come from elsewhere within OERI as well. Library professionals have been advocating and experimenting with new integrative approaches to cultivating information literacy skills for many years, often with little support or attention from other educators. They are already "converts" to the cause. What is now required is aggressive leadership by OERI to carry the message to the wider universe of educational professionals and enlist their talents and energies in meeting the challenge of providing citizens with the information literacy skills which are now necessary for success in our knowledge-based economy.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. The Office of Library Programs should renew discussions with the field to develop plans for reconfiguring the HEA Title II-B research program to focus more on building a stable infrastructure for ongoing research in library and information science. The plan should be submitted to Congress as part of the Department's recommendations for the reauthorization of the Higher Education Act.
2. Working closely with State library agencies and the professional associations, OLP should continue to explore options for improving the evaluation and assessment of library programs. As part of this effort, OLP should act to address the need for greater expertise in evaluation methodology among State library agency personnel and local program administrators, such as through the development and dissemination of a training manual.
3. OLP should establish a program of technical assistance in research methodology for the administrators of exemplary library programs to facilitate their inclusion in the National Diffusion Network.

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[114] E. Gordon Gee and Patricia Senn Breivik, "Libraries and Learning," *Libraries and the Search for Academic Excellence* (Metuchen, New Jersey: The Scarecrow Press, 1988) 33.

4. OERI should immediately institute a collection development policy for the Department of Education's Research Library which responds to the needs of Department personnel and other potential users in the education community. An action plan must also be developed to address the cataloging backlog, preservation needs of the collection, and other serious problems which GAO identified as limiting the usefulness of the Library.
5. OERI should develop an information literacy initiative to promote greater integration of classroom instruction with library-based learning at every educational level. This initiative should include the identification of existing curricula models which have proven effective, a program of dissemination and replication assistance, and financial assistance to support experimentation with promising new models and methods.
6. A special allocation of funds should be provided for OLP to supplement its small staff in order to develop a master plan for research and development activities necessary to enhance the capability of public libraries to promote the fifth National Education Goal which involves the promotion of adult literacy, continuing education, and citizenship education. Public libraries have a long history of effective operation of such programs.

16. OERI must join with the newly-established Office of Correctional Education to mount an aggressive research, development, and dissemination initiative targeted at improving correctional education.

In April 1991, President Bush announced his "America 2000" strategy to realize the six education goals promulgated by him and the Nation's Governors. The President called for "far-reaching changes in weary practices, outmoded assumptions and long assumed constraints on education [to transform a] 'Nation at Risk' into a 'Nation of Students.'" Meeting the challenge of the fifth goal—"every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy"—demands that a full and varied complement of educational opportunities be made available to support the pursuit of lifelong learning by all Americans.

Yet, without more aggressive action by OERI, the "weary practices" of the past are likely to literally lock out a significant percentage of Americans from the President's "Nation of Students"—the one million men and women confined in America's jails, prisons, and correctional institutions.

The population of America's jails and prisons is so enormous that it cannot help but command the attention of any policymaker who is honestly committed to achieving a goal of full literacy and competency for "all" adults by the year 2000. One out of every 55 adult residents of the United States is under the jurisdiction of the criminal justice system—incarcerated, on parole, or on probation.[115] On any given day, 1 in 4 young African-American men, 1 in 10 young Hispanic men, and 1 in 16 young white men are under the control of the criminal justice system.[116] This already massive, supervised and imprisoned population continues to grow at a prodigious rate year after year, with the rate of increase in 1989 the largest ever in recorded history.[117] By mid-decade, some estimate that the Nation's prison population could grow by as much as 68 percent.[118]

Most of those Americans who are now incarcerated will one day be released. Some 90 percent of the men and women who are in prison today will be released by the end of this decade.[119] They will be very much a part of America 2000.

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[115] Steve Seurer, *Learning Behind Bars: Selected Educational Programs from Juvenile, Jail, and Prison Facilities*, 1.

[116] Marc Maurer, *Young Black Men and the Criminal Justice System*, The Sentencing Project (1990), 3.

[117] Ed Wiley, III and Jacqueline Conciatore, "Solutions to Black Male Prison Crisis Elusive and Difficult," *Black Issues in Higher Education* (September 28, 1989), 6.

[118] Westat, Inc., *A Study of the ECIA Chapter 1 Neglected or Delinquent Program*, U.S. Department of Education (June 1990), 2-5.

[119] Ed Wiley III, "Prison Education Programs Attempt to Pick Up Where Society Failed," *Black Issues in Higher Education* (September 14, 1989), 12.

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But correctional education demands attention not only because of the vast size of the incarcerated population, but because of the severity of their educational needs as well. They are among the most educationally disadvantaged in the Nation. An estimated 20 to 50 percent of State and Federal prisoners are illiterate.[120] Some 49 percent of adult State prisoners dropped out of school by the 11th grade; some 94 percent have never participated in any postsecondary programming.[121] Between 28 and 43 percent of juvenile offenders have a disability which meets the definitional criteria set out in Public Law 94-142. Among adult prisoners, some 10 to 50 percent are believed to have a disability.[122]

Addressing the educational needs of these prisoners is sound public policy. Consistently, every study which has examined the impact of correctional education has found that it reduces recidivism. A 1989 study by the Bureau of Justice Statistics, for example, concluded that inmates who completed high school and participated in some postsecondary programming had rates of recidivism that were 5 to 10 percent lower than inmates who had not.[123]

Unfortunately, the severe educational needs of this burgeoning inmate population are not now being adequately addressed by the Federal, State and local correctional systems. Nationwide, currently only an estimated 20 percent of the inmate population participates in any educational or vocational program.[124] The proportion of inmates receiving educational services varies considerably from State to State, ranging from a low of just 10 percent of inmates in Nebraska and Kansas to 67 percent in Kentucky. While the Federal prison system and 11 State systems have established mandatory prison literacy programs in recent years, most have a mandated literacy standard that is below the 8th grade reading level.[125] Opportunities for GED instruction and participation in postsecondary education are much more limited.

Moreover, although an estimated 10 percent of adult inmates have disabilities and are in need of special educational services, less than 1 percent of inmates now receive them.[126] Juveniles with disabilities fare somewhat better; an estimated 80 percent of juvenile inmates with disabilities currently receive some special educational services. Even so, serious problems remain: less than 10 percent of the State departments of juvenile and adult corrections fully comply with Public Law 94-142's mandate for a free and appropriate education for individuals with disabilities who are 21 years of age and under.[127]

Even when educational programs may be available in correctional institutions, they still may not adequately meet the needs of in-

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[120] Ed Herschler, "Education: Weapon Against Crime," *Compact* (Spring 1976), 4.
[121] Wiley, "Solutions," 6.
[122] Robert B. Rutherford, Jr., et al., "Special Education in the Most Restrictive Environment," *Journal of Special Education* (Spring 1985), 59.
[123] Alice Tracy, "Recidivism and Correctional Education," Correctional Education Association (1990), 1.
[124] Steurer, 1.
[125] Heidi L. Lawyer, "Mandatory Education Research," Virginia Department of Correctional Education (1990), 1.
[126] Robert B. Rutherford, 63.
[127] O.D. Coffey, "Meeting the Needs of Youth from a Corrections Viewpoint," *Programming for Adolescents with Behavioral Disorders*, Council for Children with Behavioral Disorders (1983), 79.

mates. Described as "the most comprehensive examination of State- and federally-funded education programs in correctional institutions," the National Evaluation of Title I Programs in State Institutions for the Neglected or Delinquent, conducted by the U.S. Department of Education between 1975 and 1980, found myriad problems with the quality and effectiveness of correctional education services. Students "fail[ed] to measurably gain from participation in correctional education programs . . . failed to attain a level of proficiency to acquire a GED, and . . . either did not enter school upon their release, or soon dropped out." [128]

The Department of Education generally, and OERI specifically, have responded to this crisis in correctional education with passivity and inactivity. OERI's efforts in this area have been so slight that its role in the movement to improve correctional education can scarcely be described as participatory, much less anything approaching leadership. That clearly must change if the men and women in the American correctional system are to join the President's "Nation of Students."

The Congress has already laid a solid foundation for the Department to take the kind of proactive role in correctional education which is so urgently needed. Section 602 of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 (Public Law 101-392) established an Office of Correctional Education within the Department of Education to coordinate the Department's correctional education programs and, more generally, "to encourage and support educational programs for criminal offenders" in Federal, State, and local correctional institutions.

In creating this Office, the Congress clearly signalled its intention that the Department assume a more aggressive role in improving correctional education and gave it the means to begin to do so. Unless the Office is provided with sufficient resources, however, its promise will go unfulfilled and it will remain largely ornamental. Moreover, even with adequate funding, the Office has a somewhat narrow statutory mandate, limiting it to "technical support" to local education agencies and correctional institutions; this would seem to preclude the Office from undertaking the more extensive and comprehensive research, development, and dissemination effort which is needed in the field.

The Congress and the Department should follow through on this promising first step by assuring that the new Office of Correctional Education has sufficient financial and human resources to carry out its mandate effectively. But this in itself is not enough. OERI must also forge an ongoing working partnership with the Office to develop and implement a research and development agenda which is responsive to the unique needs and problems of the correctional education system.

There is a great deal of research to be done. As is the case with adult education, very little empirical research has been undertaken which specifically addresses education in the correctional setting.[129] The research that has been done has tended to focus exclu-

[128] Westat, 2-7.
[129] Westat, 2-24.

sively on establishing the merit of correctional education and proving its effectiveness in reducing recidivism. This is an important, and probably inevitable task, but it is now time to move on.

The teaching strategies which predominate in correctional education today have been derived largely from practices developed more than a decade ago for the instruction of educationally disadvantaged elementary school students. These practices include the use of curricula driven by a rigid sequencing which requires the attainment of basic skills prior to the development of higher-order skills, the use of teacher-controlled instruction almost exclusively, and an emphasis on rote memorization and drill and practice exercises.[130] This approach is now widely considered ineffective in educating disadvantaged youngsters at the elementary and secondary level and its effectiveness with adult learners, much less adult prison inmates, is even more dubious. In the Federal Chapter 1 program, as well as in other elementary and secondary programs serving the disadvantaged, there has been a movement to promote the adoption of new and more effective approaches in which the instruction is more interactive and the curriculum integrates the attainment of basic and higher-order skills and provides a clear, real-world context for the development and use of these skills.[131] A similar effort is now needed to dislodge this retrograde approach from correctional education. Working with the Office of Correctional Education, OERI should encourage the development and adoption of new curricula and instructional strategies which adapt this more effective, integrative and interactive approach to correctional education.

Literacy and basic skills instruction and preparation for a GED should not be the exclusive focus of this research and development initiative. Much of the renewed interest in correctional education in recent years has tended to center around promoting functional literacy only, with comparatively little attention paid to the equally compelling need to better coordinate and integrate academic instruction with vocational training and to expand inmate access to postsecondary programming both during and following imprisonment. The importance of these elements in adequately preparing prisoners for successful lives upon release is obvious. A correctional education program which effectively teaches inmates to read "Help Wanted" ads describing jobs for which they have no qualifications is not a successful program.[132]

The development of these new instructional approaches should be sensitive to the particular demands and constraints of education in the correctional setting. It must take into account, for example, that the physical facilities in correctional institutions were designed with security, not education, in mind and may therefore pose some special difficulties for the correctional educator. It should also place a priority on identifying effective strategies for accelerated instruction to assure that services can be provided to those who are imprisoned for a relatively brief period of time. Too often, these prisoners are overlooked completely in designing and

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[130] Westat, 2-13.

[131] See, for example, *Better Schooling for the Children of Poverty*, U.S. Department of Education (1990) and Mary Jean LeTendre, "Improving Chapter 1 Programs: We Can Do Better," *Phi Delta Kappan* (April 1991), 577.

[132] Lawyer, 5.

implementing educational programs. Tennessee's mandatory prison literacy program, for example, exempts completely all inmates who are within one year of release.[133] Given that the average duration of incarceration is 4 to 7 months for juveniles and 20 months for adults,[134] research and development of methods of accelerated instruction must be a priority.

Computer-assisted instruction seems particularly suited for the special needs and constraints of correctional education and has proven notably effective in the State prison systems of Iowa and Wisconsin and at other institutions where it has been tried.[135]

Another critical area of concentration should be the identification and development of effective training materials for correctional education personnel. The need is particularly acute for in-service training materials since many correctional education personnel have not received any specialized training in working with the incarcerated prior to their employment. Moreover, they lack the same kind of opportunities for professional development and in-service training available to teachers and other personnel in the public school system.[136]

The research and development initiative which OERI must undertake need not—and should not—start at ground zero. Effective educational programs do already exist in correctional institutions and systems around the United States. The Maryland Correctional Training Center at Hagerstown, for example, operates an innovative Peer Tutoring Reading Academy which enhances the reading skills and self-esteem of inmate tutors and their pupils simultaneously and makes extensive use of "real-life" reading materials.[137] Vermont has successfully integrated work and education in its State facility by requiring all inmates without a high school diploma to participate in its school program in order to obtain a paying job.[138] The Sheriff's Office of Maricopa County, Arizona provides a comprehensive basic skills and GED instructional program for inmates at the county jail, a population which, due to the brevity of incarceration, is often overlooked in the provision of educational services. Maricopa also offers a ten-week parenting skills program for women inmates with children.[139] Texas has one of the largest and most extensive correctional education programs in the Nation, providing opportunities to inmates to earn a GED and associate's, bachelor's, and master's degree through partnerships established with local school districts, community colleges, and universities.[140]

Little is now being done to tap into the expertise and knowledge base developed by the administrators of these and other effective programs. Efforts to identify promising correctional education programs have been sporadic and incomplete and, notably, have proceeded without the participation of the Department of Education.

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[133] M. H. Gerry, *Monitoring the Special Education Programs of Correctional Institutions*, U.S. Department of Education (1984).
[134] Bureau of Justice Statistics, *Report to the Nation on Crime and Justice* (1983).
[135] Westat, 2-25.
[136] Herschler, 5.
[137] Steurer, 36.
[138] Lawyer, 6.
[139] Steurer, 23.
[140] Wiley, "Prison Education Programs," 9.

In 1986, for example, the Far West Laboratory for Educational Research and Development performed a study which identified 9 model correctional education programs. Financing for the study was provided by the Department of Justice—not the Department of Education.[141] Efforts to promote and nurture the replication of these programs at other correctional institutions have been practically nonexistent. OERI must work with the Office of Correctional Education to fill this void by building and maintaining a national information base or clearinghouse of effective programs, practices, and policies in the field of correctional education. An aggressive program of dissemination and technical assistance must also be implemented to ensure that this knowledge base can be fully utilized by correctional educators and administrators. Such a dissemination program should recognize that the correctional education system is generally isolated from the rest of the education system and that existing modes of dissemination, such as the National Diffusion Network, may not be appropriate for this task.

We, as a Nation, cannot permit the new movement for educational reform and improvement to be locked outside the gates of our prisons, jails, and correctional institutions. The need to sweep out backward thinking and the "weary practices" of the past in correctional education is no less compelling than it is in any other sector of our education system. Indeed, it may be more so. Former Supreme Court Chief Justice Warren Burger has eloquently summed up the challenge that confronts us:

> We must stop relying on prison warehouses and create factories with fences around them, where there is some chance, however small, that the human beings we confine can break out of the 'life sentences' of functional illiteracy, learn their way out with some marketable skills, secure some added basic education and begin to build that self-esteem without which we would all be lost. . . . What are the options to deal with criminals? What are the steps? One is to 'lock them up and throw the keys away'; another is a policy of massive police protection that rises to the proportion of martial law; or the third is a policy of intelligent concern that enlists the best American brains, innovativeness, and drive in support of a program to make our prisons 'factories with fences.'[142]

With its resources, expertise, and national profile, OERI is uniquely positioned to take on this challenge and become the National engine we need to move forward with this new policy of "intelligent concern" the Chief Justice describes.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI should immediately conduct a survey to identify correctional institution education programs that are effective. OERI should promote the widest possible dissemination of information about "what works" in these enclosed environments.
2. OERI should fund demonstration projects which test the utilization of new methods of teaching specifically designed for the kind of "captive audience" confined to prisons and jails. The use of closed circuit television and specially developed films and videos, as well as computerized instruction, are examples

[141] Steurer, 28.
[142] Warren E. Burger, "The High Cost of Prison Tuition," *University of Miami Law Review* (May 1986), 910.

of approaches which may yield high returns on low dollar investments.

3. OERI should sponsor long-term studies of the "education effort" in the Nation's correctional institutions. "Report cards" which compare the efforts of the States should be issued, and studies which evaluate the long-range impact on the lives of former inmates and the long-term savings for society should be funded.

17. To improve the transition between school and work and ensure a systematic approach to adult education, OERI must increase its efforts to identify and evaluate promising programs and practices.

A foundation in basic literacy skills is needed by every citizen to function in school, in the family, in the community, in the voting booth, and in the workplace.[143] It is conservatively estimated that between 20 and 30 million adults have serious problems with basic skills. According to a report on adult literacy:

> They cannot read, write, compute, solve problems, communicate, or perform other basic intellectual functions well enough to gain or hold good jobs, to participate effectively in public life, or to meet many of the challenges of everyday living in an increasingly complex world.... Unless we greatly increase the skills of our workforce, we cannot maintain the health of our economy, ward off foreign competition, enhance productivity, and in general maintain our standard of living. It is those 20 million plus whose skills must increase the most."[144]

Literacy advocacy is nothing new. Every decade sees the launching of a new literacy program. In World War I, the U.S. Armed Forces developed tests for recruits when it was discovered that many of them could not read. During World War II, the Armed Forces provided 303,000 soldiers with literacy training. In the 1950's, libraries began donating substantial space and personnel to tutoring programs. In 1965, Congress created the Adult Education Program, which included Adult Basic Education (ABE) programs designed to boost literacy and job skills. In 1970, former President Richard M. Nixon established the Right to Read Program which promised to abolish illiteracy in 10 years. The program, labelled a failure by critics because of its limited scope and underfunding, was phased out in 1977.

Like other industrialized countries, the United States during the nineteenth century, developed two different levels of educational expectation—one for an academic elite, the other for the rest of the population. The majority of students are expected to learn routine skills, simple math, and basic reading. They are not expected to learn the higher-order functions of thinking and reasoning; these are reserved for the elite, originally in separate high schools, and in college preparatory programs. The curriculum most Americans are exposed to gives them little chance to learn to construct convincing arguments and to understand complex systems.[145]

Each year, 700,000 young people—as many as 50 percent in inner-city schools—drop out of high school; an equal number graduate without functional literacy. In short, every year we are sending

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[143] Paul E. Barton and Irwin S. Kirsch, *Workplace Competencies: The Need to Improve Literacy and Employment Readiness*, OERI Information Services Policy Perspectives Series, July 1990, 32.

[144] Chisman, Forrest P., *Jump Start: The Federal Role in Adult Literacy*, (Connecticut: Southport Institute for Policy Analysis, January 1989), 1-2.

[145] National Center on Education and the Economy, *America's Choice: High Skills or Low Wages!* Report of the Commission on the Skills of the American Workforce, June 1990, 100.

1.5 million young people into the job market without the skills needed to survive and succeed.[146] Postsecondary training and education for the workforce appears to be a collection of bureaucratic subsystems rather than a coherent, unified system to effectively address the needs of employees and employers.[147] Employers face a multiplicity of problems when recruiting qualified candidates. The New York Telephone Company, for example, had to test 57,000 applicants in order to find 2,100 who were qualified for entry level technical jobs.[148] The Hudson Institute discovered that the average adult, aged 21 to 25, is not reading at the level which was required in 1984 for the typical job; and while the average reading level needed for the 26 million jobs expected to be created by the year 2000 will be 3.6, the average language skill level of current labor market entrants is about 2.6.[149] In the critical area of the employment of individuals with disabilities, a 1989 study indicated that fewer than half of those 16-21 years of age worked for pay, and less than 15 percent of those out of school for more than a year received training or continuing education.[150]

Most of our high schools provide few opportunities for students to build bridges to the workplace or to gain the values, habits, and skills that European youth generally acquire through training and mentoring as part of the apprenticeship programs in which they are involved. Unfortunately, our apprenticeship system—where the average apprentice is 29 years or older—is neither designed or perceived as a school-to-work transition program. In fact, our high schools are not organized to meet the needs of employers or work-bound students. Even the vocational education system does a better job of placing its students in post-secondary educational institutions than placing them in jobs related to their course of study.[151]

OERI, in researching the appropriateness of curricula, must carefully evaluate the work of successful alternative high schools and establish a process for replicating their exemplary approaches. For example, the 70001 Training and Employment Institute uses a "competency-based curriculum" to teach job-readiness skills (such as resume writing, interviewing techniques, dependability, appearance, staff interaction, and attitude) which have been disregarded by most training programs.[152] Croom Vocational High School in Maryland, takes at-risk students, a third of whom have dropped out, and manages to gain an 80 percent completion rate with 95 percent obtaining and holding jobs. At Jane Addams Vocational High School in the South Bronx, New York 300 students have participated in The South Bronx Entrepreneurial Education Project, a five-month "capitalist boot camp." Companies formed by these students have produced sales of more than $100,000 in a two-year period. The value of the program is measured not only by the suc-

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[146] Secretary Elizabeth Dole, Remarks Before the Education Writers Association, April 5, 1990, Chicago, Illinois, 1-2.
[147] *America's Choice*, 55.
[148] *America's Choice*, 23.
[149] Committee on Economic Development, *An America That Works: The Life-Cycle Approach to a Competitive Work Force*, 1990, 67.
[150] "The Study of Programs of Instruction for Handicapped Children and Youth in Day and Residential Care Facilities" *Mathematica Policy Research*, 1989, Princeton New Jersey, 5.
[151] *America's Choice*, 46–47.
[152] *An America That Works*, 75.

cess of the business, but also by the heightened self-esteem and increased math achievement levels produced by entrepreneurship.[153]

An additional source of innovative curriculum development exists within the Department of Defense (DoD). According to the Office of Technology Assessment, much of what is known about basic skills comes from the military sector. DoD is "the largest single trainer in the United States" and has made major contributions to the development of effective training technologies. One example is the U.S. Air Force's role in the development of instructional systems design (ISD) in the 1950s and 1960s. Originally conceived as a component of "programmed instruction," ISD has proven useful in the development of all types of training. ISD approaches have been shared with the private sector and are now widely used by training-intensive companies.[154] While "some findings from military research are directly relevant to the private sector, more research needs to be focused solely on the civilian workforce. . . ." [155]

Evidence is mounting that significant numbers of workers need greater and more complex academic and occupational skills. Research on the benefits of "contextualized" or "applied" instruction (such as that found in high-quality vocational programs) suggests that these methods can promote the academic skill attainment of large numbers of students, whether those students are workbound or bound for postsecondary education. Programs that more fully integrate academic and vocational instruction are mandated by the Carl D. Perkins Vocational and Applied Technology Education Act as an important strategy for meeting the Nation's need for an internationally-competitive workforce.

The National Center for Research in Vocational Education is making the study of academic-vocational integration efforts a priority. The National Center has identified several exemplary programs with varying goals—from remediation efforts to strategies that prepare individuals for both immediate employment and postsecondary education. These innovations are relatively young, not wide-spread, and few in number. Information about various kinds of programs, their goals, how they operate, and how to develop them is sparse among urban academic and vocational practioners.

Academic and vocational integration is finding advocates among various groups, including:

1. Business representatives and researchers reporting on changing American workplaces that require workers with increased academic, analytical, problem-solving, learning-to-learn, and interpersonal skills.
2. Economic forecasters who project that Americans are undergoing 4 to 6 job changes over their work lives.
3. Vocational educators concerned with increasing the relevance of their programs.
4. Postsecondary educators concerned with enrolling students who can benefit from training without substantial remediation.

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[153] *An America That Works*, 77.
[154] OTA, *Worker Training*, 65.
[155] OTA, *Worker Training*, 179.

5. National R&D specialists who identify "contextualized" instruction as a powerful pedagogy for instilling academic skills in students of varying ability levels.[156]

With the literacy rates of our economic competitors bordering on 100 percent and a looming U.S. labor shortage, enormous national efforts are required to upgrade the skill levels of our population. An estimated 13 percent of American adults (between 17 and 21 million persons) failed the literacy survey conducted for the U.S. Department of Education in 1982.[157] Passage of this literacy test, according to the Congressional Research Service, may be "equivalent to obtaining an elementary school education." [158]

A recent OERI report underscores the current realities:

> Present literacy levels are much too low to meet current needs and expectations. . . . From the labor supply standpoint, we face a future where minority populations with traditionally lower educational attainments and traditionally lower literacy levels will be a growing proportion of new labor force entrants. Thus, society will have to run faster just to stay in the same place." [159]

The terms "workforce" and "workplace" are sometimes used interchangeably in describing basic skills programs. In its report, the Office of Technology Assessment (OTA) distinguishes between the two terms: "workforce" programs are for people not currently employed who need improved basic skills or work readiness skills to enter the workworld, while "workplace" basic skills programs are for employees. This distinction provides clear parameters for the discussion on adult literacy and basic skills.

Since the early 1980s, a number of workplace basic skills programs have been launched. These usually involve cooperative efforts by businesses, unions, educational institutions, and government.[160] This holistic approach ensures that persons most in need of a total support system (personal counseling, remedial education, basic skills, and literacy) are provided with the basis for a lifetime of productive employment.

Among the many entities offering adult education programs, libraries stand poised to provide a much more innovative and creative approach to adult learning. Libraries can, and must, contribute towards the achievement of the National Education Goals, particularly the 5th goal which calls for every adult American to be literate. Libraries can provide a vital resource for individuals for whom school has not or does not work. Today, libraries offer basic skills programs not only for dropouts and the underemployed, but also for the many thousands of arriving immigrants. It is clear, for example, that ". . . public libraries played a major role in the early part of the century in assimilating children and adults into our national life." [161] In New York City, the Queens Borough Library system is the busiest public library in the country. It has experienced an increase of 121 percent in circulation since 1981, and for the past three years has distributed more than 13.2 million books,

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[156] Dr. Mary Cross, Director, Washington Liaison Office, The National Center for Research in Vocational Education.
[157] U.S. Department of Education, *Adult Literacy Estimates for States*, Revised April 14, 1986.
[158] CRS, *National Educational Goals*.
[159] *Barton*, 25.
[160] OTA, *Worker Training*, 167.
[161] Dr. Mary Jo Lynch, 2.

magazines, and tapes. To learn English as a second language, an immigrant can go to any library branch. The Queens Library system has the largest program, teaching 3,500 people a year in its "New Americans Project." [162] OERI is authorized under Public Law 101-254, the Library Services and Construction Act, Titles I-VIII, to administer 10 major programs which provide formula grants to the States to assist public libraries in establishing and improving services, making effective use of technology, and providing funds for library-based adult literacy projects.

While it is impossible to calculate the exact amount of Federal dollars being spent on adult education, an insignificant percentage is directed towards the identification of promising programs through careful evaluation. According to Forrest P. Chisman, Director of the Project on Adult Literacy, both the government and the private sector spend only a few million dollars a year on research.[163]

Federal assistance for adult education and literacy programs is primarily authorized through the Adult Education Act (AEA) which serves 3.5 million people annually. In spite of appropriations of $193 million in fiscal year 1990, the research base underpinning this program is thin. "Only about 1 percent of the Federal Adult Education Act funds went to research in fiscal year 1990, for example. Moreover from 1975 to 1988, no AEA funds were available for national programs, a key source of funds for basic education research, evaluation and dissemination." [164]

In June 1986, the Department of Education identified 79 programs in 14 Federal agencies that conducted adult literacy programs. Coordinating these programs in order for them to, at the very least, benefit from research findings is still to be achieved. Legislation designed to accomplish this was unsuccessful in the 101st Congress.[165]

America must develop a coherent system of lifetime education and training. We must invest funds in research, dissemination, and technical assistance. It is absurd that in the America of the 1990's, those seeking to start a basic skills program are left without a research base to identify effective models to meet their particular needs.

Given the magnitude of the basic skills problems in the United States, there is a pressing need for more research on how to upgrade workplace basic skills and basic skills in general. Two of OERI's 18 research centers—the Center on Adult Literacy and the Center on the Educational Quality of the Workforce—focus primarily on workforce issues. This research could help decision-makers determine the extent to which workplace basic skills programs will need to modify the traditional model of adult basic education. On a broader scale, greater emphasis and far more resources will need to be directed toward learning research, program evaluation, and best-practice dissemination if the Nation is to ever realize a goal of eliminating the adult basic skills problem.[166]

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[162] Donatella Lorch, New York Times, June 13, 1991.
[163] Chisman, 6.
[164] OTA, *Worker Training*, 179.
[165] CRS, *Adult Literacy Issues, Programs and Options*, 1990.
[166] OTA, *Worker Training*, 154-155.

According to the *Jump start* report, "... overall, the field is intellectually, institutionally and politically weak and fragmented. ... We have remarkably little research-based knowledge about what works in basic skills education for adults, and we fail to make very good use of what we do know." [167] The report makes it clear that by the year 2010, a demographic crisis will occur as members of the baby boom generation will begin to retire. "If in the next twenty years we achieve high levels of growth the demographic deadline need not be of great concern. But unless we meet or surpass the rates of growth in our postwar years, there is a real possibility that the American standard of living will wither away." [168] The progress we make in the area of adult education may be a critical factor in avoiding the consequences of the demographic deadline.

In a recent study, Judith A. Alamprese of San Francisco State University, found that above and beyond the inadequate research base, there have been insufficient mechanisms for disseminating the minimal information that has been produced. "While ... [the] National Diffusion Network has been a primary vehicle for disseminating information about a small number of exemplary literacy programs ... this system is used by only a small number of literacy service providers. Access to the NDN also has been limited because of its evaluation requirements, which few literacy programs attempt to meet." [169] According to Alamprese, information on adult literacy programs available through ERIC has "minimal utility for practitioners." She further argues that, "greater attention needs to be given to improving the presentation of research results to make them more relevant to service providers; ... that the integration of research and technical assistance is particularly important, since one of the greatest barriers to the improvement of literacy programs has been the limited use of knowledge we have acquired of adult learners." [170]

The proposed District Education Agent Program (see Recommendation 13) makes possible the necessary linkages at the local level to allow for the maximum use of State, local and Federal resources directed in the area of adult literacy. There is a clear need to carefully evaluate Federal, State, local and privately-funded programs so that effective models can be disseminated. To meet this need, some State officials have proposed the creation of a National Basic Skills Consortium (NBSC) which "... would work to develop ways that States and other service providers could share assessment and testing tools, curricula and other products and information. It would also promote joint development of needed products and programs." [171] In supporting the need for accurate data and careful research, the Commission on Workforce Quality and Labor Market Efficiency states:

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[167] Chisman, 5.
[168] Chisman, 3.
[169] Judith A. Alamprese, "Strengthening the Knowledge Base in Adult Literacy: The Research Imperative," *Leadership for Literacy*, (San Francisco: Jossey-Bass, Inc.), 96.
[170] Alamprese, 103.
[171] OTA, *Worker Training*, 176.

Quality, nonpartisan labor market research is the best foundation for labor market policy. Absent this research, policy will be based, at best, on intuition and, at worst, on special interests.

[The] paucity of research is due in large part to low levels of government funding for human resource research. Since 1975, inflation-adjusted funding levels for research and evaluation have been cut by 52 percent in the Department of Labor, while those in the Department of Education have been cut by 63 percent. We believe that it is essential that the Departments of Labor and Education take the lead in addressing this problem by increasing their support of research.

Research should be viewed as a major component of the missions of both the Departments of Labor and Education and should be funded accordingly. The research agenda should emphasize experimental evaluations of human resource programs, analysis of determinants of the labor market status of the economically disadvantaged, and collection and dissemination of information on best employment practices.[172]

OERI must, in cooperation with the Department of Labor, take the initiative to develop a national strategy on adult education which would replace the existing inadequate system which is reflective of an inadequate knowledge base and fragmented Federal policy. In addition, OERI should work closely with the Office of Special Education Programs (OSEP) and monitor the model transition programs authorized in Public Law 101-476, the Individuals with Disabilities Education Act (IDEA). Besides creating the grants program, the law mandated that States include transition services in each individualized education program (IEP) before the student reaches the age of 16. A program based on this model can suggest a pattern of services that might be applicable for children with disabilities and their non-disabled peers.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI should give priority attention to the identification of literacy programs and programs that work best for those most in need.
2. OERI should create a multi-disciplinary adult education specialist panel to guide research, development, and dissemination in the area of adult literacy. The panel should identify research gaps, describe the need for new research, and synthesize research and evaluation findings, including programs that have worked well with the military, industry, immigrants, secondary education Chapter One Programs, and special education students with learning disabilities.
3. District Education Agents, proposed in Recommendation 13, should have as a chief mandate the need to address adult illiteracy within their districts. The DEA's should ensure that such programs are carefully nurtured and developed through the use of research findings and appropriate technical assistance.
4. OERI should work with private industry to develop demonstration programs for national television programming that could be as relevant to adult illiteracy as "Sesame Street" is to early learning. By sharing program model development costs with

[172] Commission on Workforce Quality and Labor Market Efficiency, *Investing in People: A Strategy to Address America's Workforce Crisis*, A Report to the Secretary of Labor and the American People, (Washington, DC: U.S. Department of Labor, Labor Day 1989) 36-37.

the Department of Labor and with private industry and engaging in a broad national awareness campaign, OERI can make major inroads in using television's full educational potential.

5. Serious consideration should be given to instituting more informational literacy demonstration programs in libraries across the Nation by establishing cooperative agreements between colleges, libraries, and community-based organizations.

18. OERI must address the need for an expanded educational base by promoting research which fully explores the educational utility of institutions such as public television, museums, zoos, planetariums, symphony halls and theaters.

A "learning society" or "nation of students" must not allow itself to be confined by the walls and ceilings of classrooms. Every vehicle, facility, institution, instrument, etc. must be examined; the possible yield of educational benefits must be identified; and strategies and methods must be employed to maximize such educational benefits.

A "learning society" must be saturated with activities which generate information and encourage learning. What happens in formal classrooms is the most direct, elemental and obvious knowledge transfer process. But, classrooms are not the most effective or most efficient way to teach. The classroom process probably yields its best and most profound results when it is supplemented and supported by additional learning experiences at home, in church, on trips, via interaction with non-formal cultural and educational institutions.

Research and development may be utilized to establish standards and practices which encourage a more systematic interaction and utilization of the non-classroom institutions. Very practical advantages may be gained by pushing the educational process beyond the school walls. The traditional need to have a physical place in the school for every enrolled student for a set number of hours each day is a practice which increases the capital costs for education. Even after construction, the maintenance and security of buildings places a great strain on the budgets of schools and greatly reduce the amount of funds available for instruction-related activities.

State-of-the-art science and technology museums, art museums, planetariums, zoos, etc. may offer students far more meaningful learning experiences than the classroom teacher or the antiquated school laboratories. Partnerships with nonprofit groups and the investment of education funds in freestanding educational facilities and activities represent the kind of "new American school" approach that deserves systematic exploration. Instructional components for students at many levels should be incorporated into the operations of all of the non-classroom educational institutions; however, special incentives including financial support will be necessary in order for this to take place on a significant scale.

Students may travel to these non-school resources; or it is possible to bring many of the benefits to the students in their classrooms or at home. Educational television must be further developed as a vehicle for better utilizing many of the non-classroom resources. For any single school district, the increased use of television represents prohibitive costs; however, OERI is in a position to

promote partnerships, consortiums and other joint arrangements to facilitate the enrichment of student instruction.

Numerous precedents for the use of non-school educational institutions exist already. The present need is for a more systematic approach to improve the output of such efforts and for a better organized effort to identify and disseminate information about "what works."

Each of our last seven Presidents agreed that the arts are at the core of what we are and what we should know. Yet, there remains a major gap between the need for arts education and the resources available for its implementation in the schools.

As schools come under increasing pressure to respond to the desperate number of social and educational problems their students face—from homelessness to drug and child abuse—they must enlist the support of other educationally related institutions that have traditionally served as adjuncts to schools for middle class families. Ronne Hartfield, Executive Director of Urban Gateways: The Center for Arts in Education (one of the largest multi-cultural arts education organizations in the country), has said that "the arts play a unique role in reshaping urban education to more effectively address the needs of multi-cultural student populations." [173] The need to collaborate and coordinate services between and among institutions dedicated to expanding cultural horizons, (e.g., museums, art galleries, theaters, symphony halls) has to be addressed if we are to meet the National Education Goals.

Museums, libraries, art galleries, and planetariums are visible public institutions which create community intellectual centers by their mere presence. Cultural institutions that communicate the idea of using collections to meet an agenda for learning have taken strides towards creating a population of learners. For example, the children who participate in "Learning to Read Through the Arts" workshops (operated in cooperation with the Solomon R. Guggenheim Museum in New York City) come from a variety of ethnic, socio-economic and academic backgrounds. Those with poor academic and personal self-images gain new confidence when their stories and art work are exhibited in schools and museums; untapped leadership qualities emerge as children discover that teachers, peers and the general public appreciate their talents.[174]

Museum programs offer enormous potential for use by schools. Of the 4,400 nonprofit museums (50 percent devoted to history; 20 percent to science), over 10 percent were designed for children. The educational outreach efforts of museums have expanded beyond guided tours, gallery talks, and classes for adult visitors to educational programs which are cooperatively planned and implemented with local area schools. All museums—no matter what they collect or display—can help students develop their language skills and the students' abilities to communicate with others. Interactive museums, such as San Francisco's Exploratorium, provide young people with a "hands on" science experience that would be impossible

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[173] Sandra Furey, "Connecting Culture And Education," *Perspectives: Educating America's Youth in the Arts and Their Cultural Heritage*, (Washington, DC: The John F. Kennedy Center for Performing Arts, 1990) 9.

[174] Barbara Rabson, "Reading and Riting at the Guggenheim," *School Arts*, V81 N8, April 1982, (EJ260606) 13-15.

within the traditional classroom setting. They also provide the focii for young people, particularly young women and minorities, to meet role models who can show them that scientific inventions have not been the exclusive preserves of white males. In a study that compared responses of fifth and sixth grade students who visited two participating science museums, the scores on visual tests were consistently higher than the students who had classroom lesson only. These findings indicate that a distinct correlation exists between the better test scores and the museum visits.[175]

Art galleries and museums should serve as key resources for schools endeavoring to move from a predominately Eurocentric curriculum to multi-cultural or Afrocentric curriculums. Cooperative programs between schools, museums, and art galleries have demonstrated that they can help engender an enriched understanding of the holistic nature of cultures by relating to the students' affective, as well as cognitive, understandings.[176]

Access to public museums and other cultural institutions by individuals with disabilities implies more than just getting people into buildings; it also means offering educational programs that encourage and facilitate increased participation for groups with special needs, thus assuring that the "art forms" are intellectually accessible to all members of society.[177] Express-Ways at the Chicago Public Library Cultural Center is an interactive children's art center which has an assured future because of the enthusiastic response of Chicago's children and teachers. For the designers, Suzanne Cohan and Jean Unsworth, Express-Ways conveys their conviction that the arts play a vital role in the learning of all students. Workshops for children with disabilities make Express-Ways a special experience for these children. Another unique feature of the program involves special workshops designed to extend the concepts of the exhibits beyond the exhibit itself, into art experiences and the classroom.[178]

Aileycamp, a summer camp sponsored by the Alvin Ailey Dance Ensemble, uses dance as the core curriculum to improve self-esteem, creative expression, and cognitive skills in middle school children of lower socio-economic status, and addresses three factors that increase a student's risk of dropping out: poor social bonding to positive role models and institutional structures; deficits in personal, interpersonal and cognitive skills; and lack of appropriate activities and opportunities for participation. Of the 117 students (75 percent rated as high risk) who participated in 1989, 102 completed the summer with many triumphs and transformations.[179]

Opera America, an arts education organization, has developed the first K-12 testbook series for opera. The series includes two approaches at each of the four grade levels: (1) in "Create and Produce," students develop the story, write the music, and then

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[175] Minda Borun, et al., "Planets and Pulleys: Studies of Class Visits to Science Museums," *ERIC Digest* (Washington, DC, OERI, ED267965).

[176] Kathleen Desmond, "African Elegance at the Canton Art Institute: An Exhibition Review and Participatory Learning Strategies," *Art Education*, V38, July 1985, (EJ319136) 17-20.

[177] Sandra K. Mims, "Art Museums and Special Audiences," *School Arts*, March 1982, 32-33.

[178] Jean Mormon Unsworth, "Express-Ways," *School Arts*, V82 N9, May 1983, (EJ280140) 26-27.

[179] Anna Richards, "Partnerships by Example," *Perspectives*, 36.

produce the work; (2) in "Great Works," students analyze specific works from traditional opera literature using strategies developed in the classroom.[180]

Beyond the content they carry and the culture they provide, the arts—music, poetry, visual imagery—serve as a powerful tool for learning how to learn. The arts help us "fix" information in our minds, successfully creating the anticipatory set at the emotional/feeling level for the cognitive content.[181] In a study of 52 urban black children (ages 4 and 5) taken on weekly structured trips to zoos and selected museums over a six-week period, a 20.88 percent increase in scores on the Peabody Picture Vocabulary Test (used to measure receptive language ability) was achieved by the preschoolers tested. Even in the unstructured trips, an 8.1 percent increase in scores was achieved.[182]

Arts in education—traditionally perceived to be for the already motivated—is now beginning to be seen as a necessary part of life for all. Both educators and artists, and their institutions, have to be involved and learn together. The times are right for much more interaction to take place.[183]

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. Research should be conducted on pilot programs that aim to enrich the lives of children from poor and dysfunctional families through activities centered around museums, planetariums, zoos and other educational and cultural pursuits. The research should be longitudinal in nature, focusing on the way such stimuli affect attitudes towards learning from preschool to early adulthood.
2. OERI must develop models for interactive educational resource cores that bring cultural institutions in as an integral part of the instruction process.
3. OERI should also conduct research to better define how schools and cultural institutions can best complement each other. Field-initiated researchers should be encouraged to discuss their findings within mainstream educational, rather than just cultural, publications (e.g., museum and library journals).
4. OERI should sponsor model approaches to the development of multi-cultural curricula. Such programs should call for collaboration between schools, museums, and other cultural and educational institutions.
5. Research should be conducted which fully examines the possible practical benefits of "schools without walls." The impact of such an approach on school construction and maintenance costs should be examined. The opportunities created for flexible use of facilities and intergenerational utilization should also be examined.

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[180] Marthalie Furber, "Partnerships by Example," *Perspectives*, 40.
[181] Marie Eaton, "Living, Learning and the Arts: Integrating Arts into the Curriculum in Rural Schools," *ERIC Digest* (October 1985: ED 279481).
[182] Norris M. Hayes, Ph.D., et al, "Benefits of Structured Field Trip Activities on Performance on the Peabody Picture Vocabulary Test (PPVT)," *ERIC Digest* (1983: ED274461).
[183] Mark Schubart, "Partnerships by Example," *Perspectives*, 38.

6. The vast potential of educational television and it's ability to transmit the resources of the non-school institutions should be more fully studied and demonstration projects must be promoted to establish working models suitable for school districts of all sizes.

19. OERI must provide leadership for the establishment of a more definitive Federal position on the value of the involvement of parents and community-based organizations in achieving the National Education Goals, and for determining the optimum quantity and quality of government support for activities which encourage and enhance the involvement of parents and community-based organizations.

There is an increased and almost universal recognition of the fact that schools alone cannot bear the burden of educating our children. Among all of the concerned sectors, there is a consensus that the success of educational reform requires a combination of school, parental, and community involvement. Extensive evidence shows that the role of parents in the education of their children is crucial. Parent involvement is absolutely fundamental for an effective education system. Yet, in 1981, the Reagan Administration successfully persuaded Congress to repeal most parent involvement provisions in Federal education law, on the grounds that they undermined the authority of local officials. To date, no similar sweeping Federal policy has been promulgated which changes this official position. Although several major pieces of legislation have required greater parent involvement, the present position of the Executive Branch on this crucial function remains clouded. While America 2000 casually refers to parents and families at several points, this education strategy of the current administration does not indicate a Federal preference for the assignment of a strong decision-making role to parents.

The successful implementation of the National Education Goals will require the full cooperation and participation of parents and their entire communities. The Committee for Economic Development's report, *Children in Need*, stresses the need for increased community participation in all aspects of the educational process: "... the problems of children in need call for collaborations that must extend beyond the traditional limits of the schools." [184] An example of this collaboration is *Forward in the Fifth: A Community Partnership for Rural Kentucky* which provides both technical and financial assistance to encourage a partnership between parents and businesses to promote greater communication between schools and the community in order to combat problems of low achievement and high dropout rates.[185]

Dr. Don Davies, President of the Institute for Responsive Education, testified that despite all the benefits of that are known to result from increased linkages between the school and the community, "... many public schools—including most urban schools—

[184] Committee for Economic Development, Research and Policy Committee, *Children in Need: Investment Strategies for the Educationally Disadvantaged* (Washington: CED, 1987) 65–66.
[185] *Children in Need*, 71.

have weak connections with the families and communities they serve. Most have had a tradition of isolation." [186] Dr. James Comer, in discussing resistance to parental involvement, states:

> [Although] children in school would benefit from high parental involvement, school personnel often resist such involvement. . . . Many teachers and administrators . . . attribute school problems to a willful failure of youngsters to work hard enough and behave well. . . . [They] see parents as the problem [rather than] part of the solution.
>
> Often an unspoken fear [of school personnel] is that if power is shared, power is or eventually will be lost. If parents become involved in school policy and practice, [they] are sharing power.
>
> Ironically, the other major area of resistance . . . is the parents themselves. . . . Many parents are concerned that they are only being brought in to be told about the failure of their children, and parents perceive this to be a statement that they themselves have failed. Many schools call parents only with bad news. And many parents are embarrassed by their own limited academic skills.[187]

Twenty years of research consistently indicate that parent involvement in schools is beneficial for students, parents, and schools. In a summary of 50 studies of parental involvement, Anne T. Henderson concludes:

> Programs designed with strong parent involvement produce students who perform better than otherwise identical programs that do not involve them at all. Schools that relate well to their communities have student bodies that outperform other schools. Children whose parents help them at home and stay in touch with the school score higher than children of similar aptitude and family background whose parents are not involved. Schools where children are failing improve dramatically when parents are called in to help.[188]

The James P. Comer study, conducted in two elementary schools in New Haven, Connecticut, resulted in significant lasting gains in student achievement, the best attendance records in the city, greatly reduced student behavior problems, minimized parent-staff conflict, and near grade level academic performance. In addition, several parents were motivated to return to school; others became mobilized, acquired confidence, and secured employment.[189]

Dr. Joyce Epstein of the Johns Hopkins Center for Research on Elementary and Middle Schools, in discussing her research on parental involvement and student achievement, states:

> There is consistent evidence that parents' encouragement, activities, interest at home, and their participation at school affect their children's achievement, even after the students' ability and family socioeconomic status is taken into account.[190]

Unfortunately, in most schools, parent participation remains limited in scope, generally confined to fund-raising and other volunteer activities, participation in parent-teacher conferences, and attendance at school plays or sporting events. Some research studies have indicated that parent involvement is most effective when it is "comprehensive, long-lasting, and well-planned. . . . To ensure the quality of schools as institutions serving the community, parents

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[186] Oversight Hearing on OERI, Statement of Dr. Don Davies, March 9, 1989, 73.

[187] Dr. James P. Comer, *School Power: Implications of an Intervention Project, (New York: The Free Press, 1980), 127.*

[188] Anne T. Henderson, *The Evidence Continues to Grow: Parent Involvement Improves Student Achievement*, National Committee for Citizens in Education, 1987.

[189] Comer, 142-144.

[190] Dr. Joyce Epstein, "Effects on Student Achievement of Teachers' Practices of Parental Involvement," *Literacy Through Family, Community and School Interaction*, (Greenwich: JAI Press, 1987).

must be involved at all levels in the school." [191] A study of three Michigan school districts with varying parent involvement components, found that the district with the most comprehensive parent involvement features scored the greatest gains in reading achievement.[192]

In Comer's New Haven project, small stipends provided the incentive for parents to serve as teacher aides. They also assisted with the academic program in the classrooms and formed the nucleus of the parent organization that worked with the school staff in planning social and educational programs. These and other parents served on governance bodies and various subcommittees. Thus, "they were able to bring the attitudes, values, ways, and needs of the community to these committees and activities. . . . Parents are more likely to support a school program in which they are partners in decision-making." [193]

When children's lives are chaotic and parents feel alienated from the school system, when families, educators and communities do not expect children to achieve, and when resources do not match needs, the traditional school model fails to educate effectively.[194] Successful solutions will demand the involvement of the community. Too often, school personnel are ignorant of the full range of available community services. Without a connection to the community, schools become overburdened and inefficient. Community-based organizations—neighborhood and civic associations; religious, ethnic, and political organizations; libraries; local social services agencies; recreational facilities; and other social institutions—working on social and educational problems, can provide additional resources and serve as havens of trust for parents.

The church is the original community-based institution, joining together young people, their parents, and mutually-supportive families within a larger moral and spiritual framework.[195] In concert with parents, educators must strive to achieve greater church involvement in activities which support local schools.

"Youth organizations have historically offered a training ground for citizenship, [reinforcing] the efforts of home, school, and church. . . . After the schools, youth organizations comprise our most pervasive educationally-oriented youth institutions and offer potentially ideal vehicles for many of the opportunities teenagers require. National organizations, such as the YMCA, the YWCA, Girl Scouts and Boy Scouts, are already extending before- and after-school activities." [196]

More cooperative efforts between school boards and community organizations would support the concept of the "lighted schoolhouse" which would open libraries, playgrounds, recreational facilities, and schools to the community 7 days a week, 12 months of the

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[191] Henderson, 9-10.
[192] Robert Gillum, "The Effects of Parent Involvement on Student Achievement in Three Michigan Performance Contracting Programs," Paper Presented at AERA Annual Meeting, New York, April 1977.
[193] Comer, 65-70.
[194] Committee for Economic Development, *The Unfinished Agenda: A New Vision for Child Development and Education*, 1991, 4.
[195] The William T. Grant Foundation Commission on Work, Family, and Citizenship, *The Forgotten Half: Pathways to Success for America's Youth and Young Families*, November 1988, 58.
[196] *The Forgotten Half*, 73.

year. Unfortunately, concerns about safety and the costs of heating, lighting, and insuring buildings have made it difficult to convince administrators and to pay custodians to keep schools open beyond the normal school day.[197]

The importance of research on parent and community involvement and the need to adopt and replicate exemplary programs in this area cannot be overemphasized. OERI currently funds two centers whose mission include research on families, schools, and communities. The Center on Families, Communities, and Children's Learning is conducting research on how families, schools, and communities can work in partnership to foster children's motivation, learning, and development. The Center on Education in the Inner Cities is conducting interdisciplinary research and development on families, schools, and communities to strengthen education and related resources in inner cities. The following are examples of areas where gaps in existing knowledge make it imperative that more research be conducted:

1. Research to determine the optimum percentage of Federal grant budgets which should be invested in parent involvement.
2. Research to identify the most effective types of community organizations for parent training and support.
3. Research to assess the impact of alcoholism, drugs, AIDS, and other escalating illnesses and addictions on the traditional role of parents; and to determine the need for, and possible effectiveness of, school interaction with substitute or surrogate parents.
4. Research and demonstration projects to explore the effectiveness of communication vehicles, such as local television and radio stations in training and informing parents; also projects which explore the greater utilization of traditional groups such as churches, scouts, 4-H clubs, etc. for outreach.
5. Research based on the recognition that children only spend 9 percent of their time in classrooms, while the remaining 91 percent is spent at home and in community organizations. Research and demonstration projects must seek to identify very specific ways in which schools may more effectively interact with existing institutions and community-based organizations to combat the wide range of problems faced by students which are not school- or instruction-related.

The major objective is to bring the vitality of the community into the school and to establish trust and mutual respect so that the school does not seem different and more alien to children or their parents than home, neighborhood, and the church.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must take steps to assist in the immediate clarification and update of the official position of the present administration on the role of parent involvement and community-based organizations in school reform.

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[197] *The Forgotten Half*, 73.

2. OERI should convene a meeting of representatives from all of the relevant funded entities—research centers, regional labs, information centers, and independent researchers—which are involved in studies or experiments focused on parents or community-based organizations. After a review of the work completed by these entities, OERI should forward recommendations for an update policy position to the Secretary of Education.
3. As part of the preparation for the recommendation to the Secretary, OERI should review all existing legislation which authorizes some degree of parent and community-based organization involvement. Legislation authorizing Chapter One, the Drug-Free Schools and Communities Act, and Child Care are examples of the kinds of laws which should be reviewed with recommendations to enhance their coordination, implementation, and enforcement.
4. Since there is universal agreement on the need to make school buildings more open and accessible to parents, students, families, and community organizations, OERI should develop recommendations for Federal initiatives to assist in accomplishing this relatively simple objective. The Secretary should fund demonstration projects for this purpose.
5. OERI must take steps to guarantee that entities such as the ERIC Clearinghouse on Urban Education and the newly funded Center on Education and the Inner Cities will more actively target the dissemination of the best available working programs and procedures on parent and community involvement to reach inner-city schools, their administrators, parents, and community-based organizations.
6. OERI should direct the relevant funded entities under its jurisdiction to focus on identified gaps in knowledge.
7. OERI should promote demonstration projects which seek to increase the number of competent practitioners—administrators, counselors, teachers, aides—who are specialists and advocates for improved school-family-community partnerships and who have the skill and knowledge to work with fellow teachers, principals, parents, and community leaders.
8. OERI should develop a model for the provision of detailed support for the "America 2000 Communities" concept which requires that a cross-section of community entities work together for the improvement of the local schools. The role of parents and community-based organizations within this construct must be clearly delineated. Recommendation 13 of this report proposes the establishment of a District Education Agent Program whose number one objective is the cross-coordination of all sectors of the community (Congressional District) for the purpose of achieving substantial gains in school improvement.

20. OERI must increase minority participation in the full range of education research and development activities.

There is a substantial underrepresentation of minorities in education research and development and the number is rapidly declining. It is imperative that minorities play an active role in this arena since education R&D strongly influences the education of minorities through its impact on education policies, programs, and practices. In order to achieve the National Education Goals, instructional methods and practices must be honed by research to ensure their validity and reliability, and nondiscriminatory assessment techniques must be developed to fairly measure the performance of disadvantaged students who are disproportionately minority.

In its 1990 report, the House Committee on Appropriations directed the Department of Education to "develop a pilot program which prepares minorities for research careers and increases their participation as specialists in research and development." [198] No deliberate, cohesive action has been forthcoming from the Department as a result of that directive.

The Appropriations Committee stressed the point that any initiatives to increase the number of minority researchers should be supportive of efforts to increase the representation of minorities in the education profession in general. It is from this population that many education scholars and researchers are gleaned. Futhermore, for our increasingly complex education system to work equitably, minority education professionals need to know about, and participate in, a wide range of education R&D (e.g., providing useful feedback on various programs and making wise decisions about practices to use in various circumstances).

In the ten years spanning 1976 to 1986, the number of African-Americans awarded doctorate degrees in education declined by 39 percent. "This is a foreboding trend concerning the production and contribution of Black faculty in fields related to education research and development." [199]

According to the Statistical Abstract of the United States, of the degrees conferred between 1986 and 1987 in education at the B.A., M.A., and Ph.D. levels, only 6, 8, and 8 percent, respectively, were awarded to African-American or Hispanic students. These numbers underscore the critical shortage of minorities entering the field of education and the subsequent lack of practicing teachers, administrators and professional researchers who are minorities.

Minority representation in the American Educational Research Association, the largest educational research association in the United States, is less than 12 percent (4 percent African-American,

[198] Committee on Appropriations Report, July 1990, 168.
[199] Oversight Hearing on OERI, Testimony of Dr. Harry T. Frierson, Jr., September 27, 1990.

4 percent Asian-American, 3 percent Hispanic, and .5 percent Native-American), while the minority public school population is burgeoning.[200] By the year 2000, minorities will represent over 33 percent of the school population and will be directly impacted by outcomes of education R&D.

The lack of minority participation in the development of educational reforms has been cited as a major factor in the negative school experiences of minority teachers and students. More individuals—who have a unique and valuable perspective on the relevant and pressing minority issues confronting education research—are needed in education research and development, and they must to encouraged to use their R&D skills in all areas in order to bring refreshingly poignant points of view to not only minority concerns, but to a broad spectrum of issues.

Minority professionals from all disciplines must be cultivated and encouraged to pursue careers in education research and development. The continued exclusion of minority researchers from research initiatives on the disadvantaged has been called "unethical" since such practice precludes the input of individuals most able to effectively impact project outcomes.[201] According to Dr. Henry T. Frierson, Jr . Professor at the University of North Carolina, "If this downward trend continues unabated, it portends an even dimmer future for Blacks in academia." [202] Dr. Frierson states that there are factors inherent in the academic community that suppress the participation and subsequent production of African-American education researchers, e.g., the ambivalence of the academic milieu, prejudice and discrimination, and the effects from the lack of solid mentor-protege relationships. He concludes that:

> The continued loss of potential scholars is staggering and the academic community will be remiss unless serious efforts are mounted not only to reverse the decline in Black doctorates, but also to increase substantially their production and the subsequent development of Black researchers. If not, the crisis will continue, and it will be to the detriment of the Nation.[203]

The Business-Higher Education Forum, reporting on minority life in the United States, emphatically states that it is time to stop pretending that the piecemeal education strategies of the 1960s are adequate to solve the problems of the 1990s. The Forum calls for financial incentives (e.g., loan forgiveness and merit awards) for potential students as well as faculty who serve as mentors and become a source of guidance and support for students. They state that colleges and universities must make their campuses and curricula more accommodating for minority students and "must move swiftly to stamp out the virulent new strain of bigotry that threatens to infect our campuses." [204]

The Education Commission of the States has recommended that colleges and universities implement comprehensive, institutional plans for developing minority teachers and researchers. They stress

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[200]The American Educational Research Association, *Educational Researcher*, 1990.

[201]Michelle Foster, "Research Priorities for Disadvantaged Students," manuscript prepared for the National Academy of Education.

[202]Dr. Henry T. Frierson, Jr., "The Situation of Black Student Researchers: Continuation of a Crisis," *Educational Researcher*, March 1990, 13.

[203]Frierson, 17.

[204]*Three Realities: Minority Life in the U.S.*, Business-Higher Education Forum, 1990, 63.

the need for institutional leaders to make their commitment to minority student success obvious to faculty members. Also, recognizing that the minority teacher and researcher shortage does not begin in college, intervention must be focused on the underpreparation of many minority students in elementary and secondary schools.

Other institutions that can be instrumental in the amelioration of this shortage include the Regional Educational Laboratories, designed to assist school improvement in all regions of the country. They are, however, notably absent in densely populated urban settings where large numbers of minorities are concentrated. The physical location of each laboratory is determined by OERI—through competition—and is a critical factor in its effectiveness. Though the physical distance between the Labs and urban centers might be bridged through special outreach initiatives to urban school districts, little is now being done in this area.

Nor do the professional staffs of the Labs proportionately reflect the ethnic and cultural diversity of the Nation's school population. According to information received by the Subcommittee on Select Education, 17 percent of the Labs' professional staff members are minorities, with only 6 percent holding administrative positions. The statistics are similarly bleak for the National Research Centers where minorities represent 16 percent of the professional staff.

The underrepresentation of minorities on the staffs of the Labs and Centers is perhaps not surprising given the dearth of minorities at the senior policy level at OERI itself. OERI's record on this issue is, if anything, more dismal than that of the Labs and Centers. Yet, the larger problem is not simply that OERI has failed to lead by example in expanding opportunities for minorities in education research—it is that it has failed to lead at all. This inertia must end.

OERI must accelerate and refine their efforts to enhance the participation of minorities in all realms of education research, particularly in awarding contracts. They must provide technical assistance to enable nontraditional entities to compete for research funds.

OERI must, through policy, encourage the formation of long-term innovative, collaborative relationships with local school sites, business/industry, and universities/colleges to cultivate and groom potential minority researchers through mentorship alliances, apprenticeship models, and/or tiered guidance and counseling systems. These recruitment paradigms must be supported by retention incentives such as loan forgiveness, peer networking, and institutional commitment to advancement and personnel development. The establishment of an Institute for the Education of At-Risk Students (see Recommendation 5) will provide minority scholars and researchers with the opportunity to make contributions in the area of minority education.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI must ensure a high proportion of minorities in all OERI supported activities by reinstituting criteria designed to in-

crease minority participation in proposals submitted to, and funded by, OERI. Procedures would also be established to include substantial minority participation in all specialist panels and as District Education Agents.

2. OERI must develop procedures to include minority educators in R&D activities nationally, regionally, and locally via the Regional Educational Laboratories and the National Research Centers. These projects (e.g., various types of assignments, in-service training, internships, and pre-service and continuing professional training programs) must be theme-oriented, have a strong team approach, and a strong field component.
3. As an initial priority in this area, OERI will identify methods (e.g., mentoring models) that have been effective in increasing the participation of minorities as producers and consumers in education R&D.

21. OERI must increase the investment of research, development, and dissemination efforts to improve the possibilities that all children will start school ready to learn, recognizing that school readiness is the cornerstone to quality education.

The premier National Education Goal declares that by the year 2000, all children will start school ready to learn. The strength of this goal is anchored in the objectives which provide guidance for its implementation: access to high quality and developmentally appropriate pre-kindergarten programs for all disadvantaged children and children with disabilities; training and support for all parents to teach their children; nutrition and health care for all children so that they will be ready to enter school.

The most prosperous nation on earth seems to be failing its children who are the poorest group in American society. It is now clear that investment in early childhood education is critical to the prevention of later educational failure. According to the Committee on Economic Development (CED), "For every dollar spent today to prevent educational failure, we can save $4.75 in the cost of remedial education, welfare, and crime further down the road." [205] CED further declares:

> Twenty years of comprehensive testing has proven that a single year of high quality pre-school at the age of three can cut later dropout, illiteracy, pregnancy and crime rates for the affected group from somewhere between a third and a half. . . . We [have] learned that the conditions that set a child onto the path of failure did not begin at age 3 or 4, but at conception and before.[206]

The experiences of children during their first five years is critical to their educational success. Yet, we continue to view child care and early childhood education as separate entities with different purposes and goals: early childhood education as profitable for society because it helps poor children succeed better in school; child care as a benefit to parents, rather than children, so that parents can go to work. This separation is counterproductive. According to CED's most recent publication, the gap must be narrowed by insisting that all programs for children from birth to five—whether designated as child care, early childhood education, or pre-school—focus on the healthy development and educational needs of all children.[207]

Since 1965, the importance of effective early childhood programs has grown and the demand for services under Head Start (the most comprehensive educational program for young children) has increased.[208] Head Start, a Federal grant program administered by

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[205] Committee on Economic Development, *Children in Need: Investment Strategies for the Educationally Disadvantaged*, (New York: CED, 1987) 15.

[206] *Children in Need*

[207] CED, *The Unfinished Agenda: A New Vision for Child Development and Education*, (New York: CED, 1991) 27-28.

[208] National Head Start Association, Silver Ribbon Panel Recommendations for Head Start in the 1990's, *Head Start: The Nation's Pride, a Nation's Challenge*, 1989.

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the Department of Health and Human Services (HHS), was established to bring about a greater degree of social competence in children of low-income families. While the majority of Head Start centers serve 3- to 5-year old children, there are also a small number of Parent/Child Centers that provide services to low-income infants and toddlers and their families. Grantees—which include local education and community action agencies and public and nonprofit organizations—provide programs that offer high quality pre-school experiences that prepare poor children for entry into elementary school, along with health screenings, immunizations, dental checkups, and other preventive services such as family counseling.[209]

Head Start has traditionally exemplified the power of parental involvement in children's education. The contribution of that involvement has led to the success of this program.

According to the National Commission on Children, only a fraction of the children who would benefit most from high quality early childhood programs have access to Head Start and other community-based initiatives. Despite the importance of pre-school learning and socialization for school readiness and later school success, only 20 percent of those eligible for Head Start are served. Included in those not served are children from low-income and highly-stressed families, those with disabilities, and those for whom English is not their first language.[210] We must ensure that early childhood education programs, which provide children with school readiness, are made available to the 80 percent of the population for which these services are not available.

Attention to education reform has spanned many decades. Its impact spans the spectrum from before- and after-school care to parent education programs. The significance of multicultural approaches to the success of many Head Start programs has not been adequately researched. The 1990 National Research Council report confirms that linkages between own-group cultural identity and academic competency have been found for minority children in United States, as well as in other countries. The Council is calling for research on approaches that "affirm children's cultural identities in relationship to child development."[211] Additionally, ensuring a smooth transition from early childhood education to elementary school has yet to be realized. OERI's Regional Educational Laboratories are engaged in the most extensive work in this area. With the aid of a $2.5 million cooperative agreement with HHS, they are conducting a 3-year study on the transition between Head Start programs and elementary education. The workscopes of some of the new OERI National Research Centers include studies on early childhood education. For example, the Center on Families, Communities, Schools, and Children's Learning is exploring the relationship of family and communication patterns and school behavior; the Center on Education in the Inner Cities is studying the effects of using parent education and other resources with teenage mothers and parents of Head Start children; and the Center for Re-

[209] The Committee for Education Funding, *Education Budget Impact Alert for Fiscal Year 1991: A Compilation of Federal Education Programs*, (Washington: CEF) 151.
[210] *Opening Doors*, 40.
[211] National Research Council, *Who Cares for America's Children? Child Care Policy for the 1990s*, (Washington: National Academy Press, 1990) 98.

search on Evaluation, Standards, and Student Testing is working on pre-school assessment.

These research efforts are a welcomed beginning, but inadequate when we consider the enormity of the problem. The Federal Government will be forced to commit large amounts of money for "care" programs because of the bleak picture faced by State and local governments as they attempt to provide services to: (1) the escalating numbers of pregnant women who are crack- or other drug-addicted and will give birth to babies who may be developmentally impaired and (2) the 1 in 5 children who have a developmental, learning and behavioral disorder who are identified through the Preschool and Early Intervention programs of the Individuals with Disabilities Education Act (formerly EHA). Although Congress, as part of its Omnibus Budget Bill, approved modest grants for child care, this crisis is far from being resolved. Making the crisis manageable will depend less on deciding what to do than how to do it. We know what should constitute quality child care/early childhood education and what guidelines/model programs are effective. The challenge now is to guarantee that the educational content and social service aspects of programs like Head Start are made available to all children. The Federal Government must exercise leadership by encouraging its institutions, the States and their local governments, and private businesses to: help parents defray the cost of child care/early childhood education; ensure the establishment of minimum standards; provide technical assistance; and collect data on the changing supply and demand and parental preferences.[212]

OERI can lead the way in ensuring our knowledge of school readiness by identifying the role of health, nutrition, and family circumstances; the role of multicultural approaches to the success of early childhood education programs, what interventions are effective; and most importantly, what degree of readiness is required for kindergarten and first grade programs. Dissemination of such research information will help transform a patchwork pre-school/child care system into one capable of delivering developmentally appropriate and effective early childhood education services. OERI must play a vital role in addressing these issues and must exercise leadership in assuring that early childhood education is recognized as the cornerstone to quality education.

Based on the needs, concerns, and suggestions outlined in this section, the following recommendations require immediate attention:

1. OERI should continue to encourage the collaboration between HHS and the Regional Laboratories, and additionally seek to establish collaboration with the 11 Federal agencies housing 31 early childhood programs.
2. OERI must explore additional ways to coordinate its research agenda with the research needs of other Federal early childhood education programs.
3. OERI should establish a specialist panel, composed of early childhood education practitioners, researchers, and community leaders to identify research gaps and suggest which research areas

[212] Child Care Action Campaign, *Child Care: The Bottom Line*, 1988, 17.

require syntheses (identifying formats and audiences for the use of the material developed) and propose demonstration programs to test the effectiveness of such interventions on a larger scale.

4. OERI should study the feasibility of including early childhood education as an integral part of traditional "custodial" day care programs under Title IV-A, Title XX, and Child Care Food Programs.

III. SUMMARY OF HEARING TESTIMONY

INTRODUCTION

The Subcommittee on Select Education held 12 hearings on the Office of Educational Research and Improvement from July 30, 1987 through May 8, 1991. Whereas Chairman Owens has repeatedly stressed the need to "... more effectively mobilize the resources necessary to address the needs of the educationally disadvantaged," these hearings covered a myriad of subjects regarding education research and development which elicited information on how OERI could be reinvigorated by increasing its budget, reorganizing its infrastructure, and redirecting its priorities especially as they pertain to improving urban schools. What follows is a summary of hearing findings grouped by subject area, preceded by brief topical descriptions of each hearing.

July 30, 1987

This hearing was convened to examine plans to restructure the Educational Resources Information Center (ERIC) and to ensure that valuable components of the system were preserved in the modification process. Since the Center is widely acknowledged as the world's most visible social science database and operating smoothly, the Subcommittee wanted assurances that the improvements considered by OERI would maintain the assets of the ERIC system.

One of the major modifications was to popularize ERIC's dissemination methods and to make its contents more accessible. Another new proposal was for ERIC to have the capacity to provide statistical data. The Subcommittee was particularly interested in the comparative user costs of ERIC, the percentage of the Department of Education's budget spent on providing information, the interaction between the ERIC system and other Department programs, and the proposed addition of three components to the system. Chairman Owens expressed concern that some of the proposed changes were unjustified and required Congressional scrutiny.

Testimony and recommendations were heard regarding the operation and effectiveness of the system as well as the feasibility of altering the existing ERIC structure. The witnesses were: Lynn Barnett, Chair, ERIC Technical Steering Committee; Leslie Bjorncrantz, Curriculum Librarian and Education Bibliographer, Northwestern University; Donald Ely, Director, ERIC Clearinghouse on Information Resources, Syracuse University; Don Erikson, Director, ERIC Clearinghouse on Handicapped and Gifted Children; Natalie Felsher, Reading Specialist, Montgomery County Public Schools; Chester Finn, Assistant Secretary for Educational Research and Improvement, U.S. Department of Education; Charles Hoover, former Director, ERIC, and former Assistant Director for Informa-

tion Resources, National Institute of Education; and Kenneth S. Tollett, Distinguished Professor of Higher Education, Graduate School of Arts and Science, Howard University. Additionally, prepared statements, letters, supplemental materials, et cetera were submitted by the American Educational Research Association; Robert E. Chesley, Educator; and Paula Montgomery, Maryland State Department of Education.

April 20 and 21, 1988

The purpose of the Subcommittee hearings on April 20 and 21, 1988 was to determine the extent to which the Nation's education research agenda reflects its key educational priorities, and the potential consequences for ignoring them. In addition, the Subcommittee hoped to initiate a debate about whether the Department of Education's research infrastructure—consisting largely of a network of labs, centers and clearinghouses—is adequate to meet the challenges identified in a host of recent influential reports on the current crisis in education, or whether new research entities are required.

Additionally, Subcommittee Chairman Owens has expressed concern about the low status accorded education R&D. While there appears to be a correlation between military capability and the Defense Department's investment in military R&D, the connection between education research and improved practice is not obvious to most practitioners.

Yet another area of concern to the Subcommittee was the limited funding of education R&D. Although education research may never need the funding levels absorbed by the military R&D effort, Chairman Owens indicated that the Subcommittee intended to press for more adequate funding for the Nation's education research and development program.

With these concerns in mind, witnesses at the OERI hearings offered testimony and recommendations concerning OERI's budget, mission, structure, and priorities, as well as ways in which research methods and dissemination could be improved. The witnesses were: P. Michael Timpane, President, Teacher's College, Columbia University; Nathaniel M. Semple, Vice-President and Secretary, Research and Policy Committee, Committee for Economic Development; James S. Coleman, National Opinion Research Center; Faustine C. Jones-Wilson, The Bureau of Educational Research, School of Education, Howard University; Mary Hatwood Futrell, President, National Education Association; Eleanor Chelimsky, Director, Program Evaluation and Methodology Division, General Accounting Office; Alan C. Purves, Director of the Center for Writing and Literacy, State University of New York; Albert Shanker, President, American Federation of Teachers; Chester E. Finn, Jr., Assistant Secretary for the Office of Educational Research and Improvement, Department of Education; Charles Wallgren, Executive Vice-President, High/Scope Educational Research Foundation; James Hyman, Vice-President, Manpower Demonstration Program; Denis Doyle, Senior Research Fellow, The Hudson Institute; Christopher T. Cross, President of the University Research Corporation, and Chairman of the Laboratory Review Panel, OERI; John E. Hopkins, Executive Director, Research for Better Schools; Susan

Fuhrman, Director, Center on State and Local Policy, Development and Leadership. Rutgers University; Gordon Ambach, Executive Director, Council of Chief State School Officers; Nancy Cole, President, American Educational Research Association; Judi Conrad, Assistant Director, ERIC Clearinghouse on Handicapped and Gifted Children and Chair, Council of ERIC Directors (COED); Michael Kaplan, Director, Basic Research, U.S. Army Institute; and Richard E. Rowberg, Chief, Science Policy Research Division, Congressional Research Service.

September 29, 1988

The September 29, 1988 hearing addressed the creation of a new Center for Effective Schooling of Disadvantaged Students. Chairman Owens opened with a scathing indictment of this grant's award process which he characterized as long-overdue, "slip-shod," "hastily conceived" and lacking the support and input of researchers most familiar with the problems of the educationally disadvantaged. He expressed disappointment in OERI's planning proposal and questioned the behavior of top OERI officials who refused to discuss the Center's funding process with the authorizing committee and instead rushed the review process and apparently ignored the deliberations normally undertaken.

Chairman Owens welcomed the comments of the distinguished panelists not only on the proposed Center but on the Subcommittee's Preliminary Report which contained a recommendation for an entity that would focus on the education of at-risk students.

A hybrid center-lab of the kind referred to in that report could pursue the problem of assisting ailing schools by far more aggressive and interventionist strategies. The criteria for award winners could be based much more on an institution's capacity to work and communicate with disadvantaged groups. It would be more coordinated with the existing centers and able to work more systematically with existing school systems than is presently the case.

Panelists gave testimony on issues related to the instruction of educationally disadvantaged students and what factors must be considered when designing strategies to improve their performance. The witnesses were: Eric Cooper, Vice President, In-Service Training and Communications, Simon and Schuster School Group; Willis Hawley, Chairperson, American Educational Research Association, Vanderbilt University; Dale Mann, Professor and Senior Research Associate, Center for Education and the Economy, Teachers College, Columbia University; B.D. Mayberry, Acting Director, Carver Research Foundation, Tuskegee University; Charles Moody, Vice Provost for Minority Affairs, University of Michigan, Ann Arbor; Linda Roberts, Project Director, Office of Technology Assessment, U.S. Congress; Harriet Doss Willis, Director, Southwest Center for Educational Equity, Southwest Regional Laboratory.

March 9, 1989

This oversight hearing was concerned with the depressed status of many urban schools and how they may be improved with the effective application of education research. Chairman Owens sought to ascertain plausible administration responses to the educational challenges in inner-city schools and identified research and development as the Federal Government's responsibility and the key to

equalized educational opportunities. He faulted OERI for not realizing its full potential, i.e., the capacity to affect radical, systemic educational change through the activities of a network of centers, labs, and related services.

This infrastructure's collective power to provide specific help to schools and districts that seek change and improvement is staggering. Yet, it has not been successfully mobilized to make a difference in the inner cities. Let's put the available information to work by using successful and proven models to empower teachers, parents and educators.

The major topic of discussion was how the Federal Government could most effectively and efficiently utilize its education research resources to address the current educational crisis in our Nation. Chairman Owens reiterated the need to continually strive for equity as we advance the cause of excellence. The witnesses included: Ruth Allen, Director of New York City Programs, Cornell Cooperative Extension; Don Davies, President, Institute for Responsive Education; Patricia Edwards, Center for the Study of Reading; Joyce Epstein, Center for Research on Elementary and Middle Schools, Johns Hopkins University; John Murphy, Superintendent, Prince Georges County Schools; Jon Wagner, Director, Cooperative Extension Program, University of California at Davis; Lisa Walker, Director of Policy Resources, Institute for Educational Leadership; Lois Wille, Editorial Page Editor, Chicago Tribune.

September 14, 1989

The purpose of this hearing was to determine the relevance of OERI and its activities to urban schools and at-risk populations, and to provide a forum for experts in this field to discuss the degree to which ERIC, the regional laboratories, and the national research centers positively impact inner-city schools. Of prime concern was the utilization of these OERI components and the quality of assistance they provide. Expert testimony was offered by: Robert A. Dentler, Professor of Sociology, University of Massachusetts at Boston; Christopher Edley, Jr., Esquire, Professor of Law, Harvard University; Paul T. Hill, Co-author, "Educational Progress: Cities Mobilize to Improve Their Schools"; Gerald Jaynes, Study Director, "A Common Destiny; Blacks and American Society"; Lee Etta Powell, Superintendent of Schools, Cincinnati, Ohio; Wornie Reed, Director, Trotter Institute of Black Culture, University of Massachusetts at Boston.

October 26, 1989

This hearing focused on the National Research Centers and convened to determine whether the procedures for funding these 12 proposed Centers were adequate, given the Nation's urgent educational problems. Referring to the Charlottesville communique, Chairman Owens noted that it acknowledged that federally-sponsored research, development, and dissemination can help provide the fuel for the "educational perestroika" the Nation needs.

This oversight hearing was held to question OERI's priorities and guidelines regarding the Centers in light of the enormous educational reform task the country faces. Additionally, the Subcommittee was deeply disturbed by apparent partisan interference in this funding process.

In addition to being short-sighted and unconventional, this funding process is laced with a cyanide of partisan slogans selling the concept of 'choice,' a bright idea with no scientific validation.

The hearing tackled difficult issues concerning the image of education research and development and the opportunity to redeem its reputation by advancing a long-term agenda which is scientifically-based and insulated from partisan interference. The hearing witnesses were as follows: James Keefe, Director, Government Relations, National Association of Secondary School Principals; Edward Keller, Executive Director, National Association of Elementary School Principals; Arnold Webb, Senior Research Director, Cooperative School Improvement, Research for Better Schools (Testifying on behalf of the Council for Educational Development and Research; Ramon Santiago, Professor, Department of Linguistics, Georgetown University; Richard Wallace, Superintendent, Pittsburgh Public Schools; David Imig, Executive Director, American Association of Colleges for Teacher Education; Arthur E. Wise, Director, Center for the Study of Teaching, the Rand Corporation. Prepared statements were included from the following: The National School Boards Association; Daniele Ghiolfi Rodamar, Assistant Professor, Department of Language and Foreign Studies, American University.

September 27, 1990

The plight of the African-American male was addressed at this hearing with the goal of identifying ways in which education research and reform can help to increase the role of education in ameliorating their condition. The three panels discussed the myths that impede the educational progress of African-American males, identified exemplary models and approaches to education, and summarized new strategies for producing African-American teachers.

Chairman Owens alluded to the present state of affairs as a crisis in the African-American community which requires emergency action to rescue these children. In particular, he called for a new Institute for the Education of At-Risk Students (a more fully developed and refined version of his previously proposed center-lab concept) which would support research, development, and dissemination activities related to identification, evaluation, and use of resources to help at-risk students succeed and would increase the participation of minority professionals in the education system and activities of the Institute. The witnesses were: Norma Ewing, Chairperson, Special Education Department, Southern Illinois University; Barbara Holmes, Director, Policy Studies, Education Commission of the States; Henry Frierson, Office of Educational Development, University of North Carolina at Chapel Hill; William Oliver, Criminal Justice Program, University of Delaware; Larry Hawkins, Institute for Athletics and Education, University of Chicago; Shirley McBay, President, Quality Education for Minorities Network; Geneva Gay, School of Education, Purdue University; Warren Simmons, Director of Equity Assurance Programs, Prince Georges County Public Schools; Michael K. Grady, Research Associate, Prince Georges County Public Schools; W. Curtis Banks, Psychology Department, Howard University; Jomills Henry Braddock

II, Director, Center for Research on Effective Schooling. Prepared statements were received from: Steven Bossert, Dean, School of Education; Bruce Hare, Professor and Department Chair, African-American Studies and William Pollard, Dean, School of Social Work, Syracuse University.

March 20, 1991

This hearing was held to determine the nature of the private sector contribution to improving educational equity and the role OERI might play in furthering the potential of private sector initiatives. Chairman Owens expressed the belief that a critical factor in improving our Nation's effectiveness in global economic competition is the successful involvement of the private sector in education policy-making and in setting priorities for education research and development.

The witnesses were: Mr. William Kohlberg, President, National Alliance of Business, Mr. William Lurie, President, The Business Roundtable, Mr. Nat Semple, Vice President and Secretary, Committee for Economic Development, Mr. G. Carl Ball, Chairman of the Board, George J. Ball, Inc., Dr. Dale Mann, National Learning Foundation, Teachers College, Columbia University, Dr. Berl Hogins, Co-Founder and Senior Vice President and Mr. John Kernan, CEO, Jostens Learning Corporation, Mr. William Clark, President and CEO, Optical Learning Systems.

April 23, 1991

Educational assessment was the topic of this hearing, focusing specifically on the adverse impact of a national test on minority populations. Testimony was heard on the potential consequences of the new assessment initiatives proposed by the Bush Administration in "America 2000." Of prime concern was the effects of a national test on equal education opportunity, educational standards and curricula, and student achievement. Chairman Owens expressed his skepticism regarding the feasibility of a national test, citing the unfortunate history in this country of the misuse of tests, resulting in the perpetuation of inequalities and discrimination.

The witnesses included: Marc Tucker, President, National Center on Education and The Economy, Dr. Eva L. Baker, Co-Director, UCLA Center for Study of Evaluation and Testing, Dr. Monty Neill, Associate Director, Fair Test, Dr. Joan Baratz-Snowden, Vice-President, Assessments and Research, National Board for Professional Teaching Standards, Dr. George Madaus, Boisi Professor of Education and Public Policy and Director of the Center for the Study of testing, Evaluation and Educational Policy, Boston College, Dr. Edward De Avila, President, Linguametrics, Donald Barfield, Far West Laboratory, Dr. Anita R. Lancaster, U.S. Department of Defense. Written testimony was submitted by Dr. Jeannie Oakes, Professor of Education, UCLA and Dr. Linda F. Winfield, Principal Research Scientist, The John Hopkins University Center for Research on Effective Schooling for Disadvantaged Students.

April 25, 1991

On this date, a hearing was convened to discuss the feasibility of an Institute for the Education of At-Risk Students. Mr. Owens—a

staunch supporter of quality education research, development, and dissemination—recognizes that school improvement efforts must be driven by sound research and that the educational crisis in our country requires nothing short of a galvanized action agenda, spearheaded by a national research entity expressly created to address the needs of educationally at-risk youth.

The discussion focused on four general issues: the nature and extent of the problem, programs and models that work, recommended lines of research, and funding. All of the witnesses wholeheartedly supported the establishment of an Institute for the Education of At-Risk Students and made recommendations about how this Institute should be configured. The witnesses were: James Comer, Director, Yale Child Study Center, Yale University; Keith Geiger, President, National Education Association; Edmund Gordon, Professor of Psychology and Afro-American Studies, Yale University; Linda Darling-Hammond, Professor and Co-Director NCREST, Teachers College, Columbia University; C. Todd Strohmenger, Laura I. Rendon, Associate Professor, Adult and Community College Education, North Carolina State University; Shirley M. McBay, President, Quality Education for Minorities Network; and Ruby Thompson, President, Clark Atlanta University.

FINDINGS

Grouped by subject area, some of the salient points made at the hearings are summarized below.

MISSION

Mission is generally construed as an organization's statement of purpose. On the subject of mission, Gordon M. Ambach, Executive Director of the Council of Chief State School Officers, expressed the view that the Federal education research bureaucracy is fragmented because it lacks a mission-oriented research agenda. To remedy this situation, Ambach recommended the goal of 100 percent high school graduation by the year 2000. In addition Ambach believes that education R&D should be directed towards improved policy and practice, i.e., it should emphasize applied research. In order to sustain this mission, Ambach recommends that education researchers be held accountable by making them demonstrate that their research has resulted in improved practice.

Susan Fuhrman, Director of the Center for Policy Research in Education, questioned whether the goal of a 100 percent high school graduation rate would actually improve the quality of education:

> We could have people going through three years in math and science and not necessarily address what they're learning in math and science, particularly with our current level of assessment and testing. So, we could have a 100 percent graduation rate with people passing basic skills test perhaps to graduate and not necessarily raise the level of the workforce to address the problems of the 21st century.[213]

[213] United States House of Representatives, Subcommittee on Select Education, Oversight Hearing on the Office of Educational Research and Improvement (OERI), Testimony of Susan Fuhrman, April 21, 1988.

Assistant Secretary Finn provided some background on the current mission statement for U.S. education policy set forth in OERI's authorizing legislation, which reads in part as follows:

> The Congress hereby declares it to be the policy of the United States to provide to every person an *equal opportunity to receive an education of high quality* (emphasis added) regardless of his race, color, religion, sex, age, handicap, national origin, or social class. Although the American educational system has pursued this objective, it has not yet attained that objective. Inequalities of opportunity to receive high quality education remain pronounced [20 U.S.C. 1221(a)(1) (1972)].

According to Finn, this language was originally part of a message prepared by a White House task force, including himself and Daniel Patrick Moynihan, that was sent to Congress by President Nixon in 1970. Nixon's message advocated the creation of NIE, and Congress subsequently included the language in NIE's enabling legislation.

There was considerable discussion at the hearing on whether OERI has promoted its mission, with some witnesses arguing that the labs and centers devote less attention than they should to research on the education of disadvantaged youth. John E. Hopkins, however, believes that contributions of the labs and centers in this critical area have been underestimated. When asked what percent of his laboratory's activity is devoted to disadvantaged youth, Hopkins responded:

> I will tell you that at my laboratory the vast majority of our effort is devoted towards at-risk children, and I would put the figure at my laboratory at 75 or 80 percent of our effort.
>
> The reason for that is our funds are so slim that we only work on the highest-priority activities of the people with whom we partner, and their greatest concern is the advancement and benefit of at-risk children.
>
> Since that is their concern and our concern, we have no difficulty whatsoever in finding willing partners to work in this area, whether you're talking about field studies, whether you're talking about development or dissemination, technical assistance or training, the focus of our work is predominantly on at-risk children.[214]

Since no existing evaluations of the labs and centers or field-initiated studies have addressed this question, it is not possible to determine to what extent federally funded education R&D has focused on disadvantaged youth.

PRIORITIES

Eleanor Chelimsky expressed concern about a fundamental shift in OERI's research priorities, which was documented in the GAO report, *Education Information*:

> First, not only was less information produced: we also found changes in priorities. For the National Institute of Education's portfolio of activities, there was a shift away from new data production to service-oriented activities, such as dissemination of results and the provision of expert witnesses in civil rights cases. Sixty-five percent of NIE's 1980 awards were for new data collection, but only 11 percent of the 1985 awards were dedicated to this function. In our view, this shift was so dramatic that the availability of *up-to-date* information to disseminate to teachers and other practitioners may be seriously jeopardized.[215]

While some of the shift in priorities can be explained by reductions in both the number and amount of research awards, some of it is attributable to management turnover during the 1980's. For

[214] Oversight Hearing on OERI, Testimony of John E. Hopkins, April 21, 1988.
[215] Oversight Hearing on OERI, Statement of Eleanor Chelimsky, April 20, 1988.

example, research in the area of higher-order thinking skills, was abandoned because: "Despite a 3-year effort to develop research proposals in this area—an effort that resulted in 30 proposals being recommended for funding by panels of experts—no awards were made. A change in directors had meant that this was no longer seen as a priority area." [216]

James Coleman also expressed unhappiness with OERI's priorities. Coleman believes that education research is skewed in favor of the producers of education, namely teachers, rather than towards children, who are the real consumers of education. Coleman commented that unless the direction of education research is changed, "... The weight of expenditures of the Department of Education will be focused on matters of interest to the producers: expenditures on research will be weighted on research on *schools and teachers*, to the neglect of the study of children's learning (or not learning) outside school." [217] Coleman recommends that Congress redefine the Department's mission to encompass learning both in and out of school.

P. Michael Timpane, on the other hand, believes that the Federal Government has done a good job of identifying its education research agenda. He cites literacy and reading, effective schools, bilingual education and school finance as areas in which it has achieved significant progress. Timpane recommends education of disadvantaged Americans, teaching and school reform, and learning as the most important priorities for education research in the future.

Mary Hatwood Futrell, President of the National Education Association, does not share this sanguine assessment. Furthermore, she believes that the Subcommittee poses the wrong question when it asks whether the Nation's research agenda reflects America's key education priorities: "A more fundamental question is whether America's education priorities reflect the conclusions of educational research." [218] In her view the Nation's education research agenda has suffered because teachers are excluded from the reform process and because the process has been overly politicized. Futrell believes that the problem of politicization can be corrected by striking a balance between field-initiated and Department-sponsored research. She also advocates research that evaluates existing educational reforms (i.e., applied rather than basic) and that emphasizes curriculum, cognitive theory, and the needs of "at-risk" students.

Howard University Professor Faustine Jones-Wilson's recommendations for education research include more research on: effective teachers, principals and staff; evaluation and monitoring; networking among teachers, students, parents and administrators; curriculum; class size, grouping and class scheduling; parental volunteers; standardized testing; high school work-study; and educational philanthropy.

Nathaniel Semple of CED argues for research that explores the economic returns on education. He also listed several programmatic areas that warrant improved data collection and analysis: com-

[216] Oversight Hearing on OERI, Statement of Eleanor Chelimsky, April 20, 1988.
[217] Oversight Hearing on OERI, Statement of James S. Coleman, April 20, 1988.
[218] Oversight Hearing on OERI, Statement of Mary Hatwood Futrell, April 20, 1988.

parative data on educational achievement; adult learning deficiencies; employment readiness; international comparisons of educational achievement; and educational technology.[219]

Parent Involvement

The recurring theme in the testimony regarding parent involvement in their children's schools was the need for better coordination and communication among programs and between agencies. Also, according to John Murphy, Superintendent, Prince Georges County Schools, there is a need for accountability along with the implementation of school reform models such as those of James Comer and Ron Edmonds which emphasize strong parental participation.

Patricia Edwards, Senior Researcher at the Center for Reading, suggested several research areas regarding participation of poor and minority parents and the effects of that involvement on student success; for instance, longitudinal studies, descriptions of various strategies and structure for involvement, and methods for bridging the gap between parents and teachers.

Don Davies, President of the Institute for Responsive Education highlighted several activities that can influence the achievement level of urban schools; among them was the need for schools and families to support each other and communicate more clearly and frequently. Parents must be encouraged to participate in the governance of their children's schools. This notion was validated by Joyce Epstein, Program Director at the Center for Research on Elementary and Middle Schools, who went on to disspell the myth that poor parents are apathetic towards their children's education. Her research indicated that socio-economic status was less of a determining factor in parental participation than other factors such as the school administration's encouragement.

> The data are very clear that the school's practices to inform and involve parents are more important than parent education, family size, marital status, and even grade level in determining whether the inner city parents stay involved in their children's education.[220]

Dr. Epstein outlined a Federal education research agenda that included more coordination among Federal programs serving children and families; establishment of a national clearinghouse to collect and disseminate research and evaluations to educators and provide field services to States, districts, and schools; and multiyear grants to schools and researchers.

INSTRUCTION OF EDUCATIONALLY DISADVANTAGED STUDENTS

There are various factors related to research and instruction of low income students that must be considered when we design strategies to improve their performance. Among these factors, according to Eric Cooper, Vice President, In-Service Training and Telecommunications, Simon and Schuster School Group, are the low expectations of teachers and administrators and the lack of minority role models for students. Further, he noted that instructional mate-

[219] Oversight Hearing on OERI, Testimony of Nathaniel M. Semple, April 20, 1988.
[220] Oversight Hearing on OERI , Testimony of Joyce Epstein, March 9, 1989.

rials are usually focused on lower order skills and do not challenge students to analyze and synthesize. Mr. Cooper also pointed out that there is a lack of partnership between the home, the school, and the community. When partnerships are forged, he said, more opportunities to learn emerge, and student achievement improves.

Dr. Willis Hawley, Chairperson of AERA, expressed concern that the Federal Government's approach to research and development programs for the disadvantaged was too little, too late. He claimed OERI's neglect of the education of the disadvantaged may have been due to four circumstances:

a) the wrong people were asked when suggestions for a priority agenda were solicited
b) The wrong questions were asked
c) the answers were not heard
d) the intent or essence was lost in translating the recommendation into research activity

Regardless of reasons, Mr. Hawley commented, it is clear that OERI must, in comprehensive ways, address the educational needs of the disadvantaged and to that end, he elucidated seven alternative approaches to the problem, not the least of which was a long-term system-wide coordination of activities among Federal agencies.

> The educational needs of the disadvantaged are rooted in a number of conditions that are relevant to the missions of several agencies . . . ED should exert leadership in developing systemic responses to the developmental needs of the disadvantaged.[221]

Dr. Harriet Doss Willis, Director of the Southwest Center for Educational Equity, Southwest Regional Laboratory applauded the idea of a national center for the education of disadvantaged students but indicated that the problems are so intense, diverse, and deep-seated that the initiative would demand increased funding to be effective. She asserted that:

> One or two million dollars is ludicrous to address this problem. We probably need between $35 and $50 million.[222]

Additionally, Dr. Doss-Willis stressed that more is known about what is effective for disadvantaged students than is utilized, so the variety of solutions that work need to be communicated to school leaders in a readily consumable manner. The most efficient way to accomplish this task is by implementing a district education agent plan wherein direct technical assistance may be provided to schools serving the most needy students.

The district education agent plan is an outgrowth of the cooperative extension program model. Dr. B. D. Mayberry, Acting Director of the Carver Research Foundation at Tuskegee University, traced the history of the cooperative extension program model from Booker T. Washington's program at Tuskegee University to the present proposed system and described the essential components of this type of program.

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[221] Oversight Hearing on OERI, Testimony of Willis Hawley, September 29, 1988, 20-21.
[222] Oversight Hearing on OERI, Testimony of Dr. Harriet Doss-Willis, September 29, 1988, 83.

The keys to success of the extension system [are] one, identify the particular problems in question. Two, develop object lessons in education related to the specific problems identified. Three, identify indigenous agents, especially in terms of sociocultural capability to communicate with and relate to the target area.[223]

Dr. Ruth Allen of the Cornell Cooperative Extension and Dr. Jon Wagner of the Cooperative Extension Program, University of California at Davis, thoroughly explained how an extension program provides direct assistance in applying the fruits of educational research to families, schools and communities in need. They both recounted the successes of numerous extension activities. Though similar to the Tuskegee extension project (i.e. practical applications delivered by indigenous agents), Dr. Allen felt the cornerstone of the Cornell Cooperative Extension model is partnership.

The cornerstone of the Extension model is partnership, a partnership between funders—State, local and Federal—who, acting in concert, have a far greater impact than any single partner could have acting in isolation. It is a partnership between people, people who know the research and its situational interpretation by the people who are living it.[224]

Dr. Charles D. Moody, Vice Provost for Minority Affairs at the University of Michigan in Ann Arbor, in discussing the proposed Center, raised questions about the target population and how it will be identified; the dissemination and use of findings, and how it would help educators relinquish what does not work and implement what does. He also stated that other issues the Center will have to examine included: the notion of ascription, collaboration, governance, and funding.

Dr. Dale Mann, Professor and Senior Research Associate at the Center for Education and the American Economy, Teachers College, Columbia University, gave testimony that public schools are failing our children and argued for interventions that will make radical changes in the way needy students are educated. One case in point is the use of technology, and particularly, interactive videodisc instruction whose demonstrated effectiveness is very promising for "hard to reach, expensive to teach," populations.

If teaching is to be effective with a group that believes it has seen everything and believes nothing, then that experience has to be relevant to their world, instantly responsive to what they do or don't do. The dramatic power of video, the storage and access capacity of laser discs, and the intelligence of a micro-computer can be used to rachet schooling for the disadvantaged to a new level of power.[225]

Dr. Linda Roberts, Project Director, Office of Technology Assessment, U.S. Congress, concurred with Dr. Mann's belief that technology is an important resource in ameliorating the educational performance of disadvantaged students. She referred to a host of new technological tools that could facilitate their learning (e.g., interactive technologies, computer-generated graphics, educational programming via television, cable, satellite, and electronic networks); however, she lamented that underfunding and other factors have broken the stride of educational technology.

The low level of Federal funding for educational technology R&D in the civilian agencies, an absence of a coordinated Federal policy, short-term commitments, and disorganized R&D efforts across agencies mean that educational technology research

[223] Oversight Hearing on OERI, Testimony of Dr. B. D. Mayberry, September 29, 1988, 54.
[224] Oversight Hearing on OERI, Testimony of Dr. Ruth Allen, March 9, 1989, 142.
[225] Oversight Hearing on OERI, Testimony of Dr. Dale Mann, September 29, 1988, 70–71.

and development is not keeping up with rapidly changing technology. This and the issues surrounding appropriate funding and organization of educational research are areas that will require continued Congressional oversight.[226]

THE STATUS OF URBAN SCHOOLS

Several witnesses, such as Lois Wille, Editorial Page Editor, Chicago Tribune and Lisa Walker, Director of Policy Resources, Institute for Educational Leadership, painted dismal pictures of the state of urban schools. Common to all of them were scarce resources, overcrowdedness, lack of supplies and a shortage of qualified staff.

Gerald Jaynes, Study Director for "A Common Destiny: Blacks and American Society," spoke of the educational findings in his report which could be summarized by the following:

> . . . although better by a wide margin than it was some three or four decades ago, by nearly all objective aggregate measures the status of blacks relative to whites has stagnated or regressed since the 1970s.[227]

Dr. Jaynes reported many factors that contribute to the disparity between the educational achievement of blacks and whites. These factors include differences in the schooling process (e.g., content and organization of instruction, school climate), teacher expectation and allocation of resources. Mr. Jaynes agrees with Mr. Cooper's recognition that these factors are critical in devising solutions to this very tough educational problem.

Robert A. Dentler, Professor of Sociology at the University of Massachusetts at Boston, presented a brief historical perspective of the Federal Government's investment in education research and development. He implicated Federal ambivalence and partisan interference as the culprits responsible for the demise of education in the inner cities.

> NIE virtually from its creation became . . . what I would call a hall of noisy and blowing crosswinds of political contention, and most of its staff . . . were composed of what I would call the least competent, most burnt-out of civil servants who were discarded by the U.S. Office of Education. There were important exceptions, of course.[228]

Dr. Lee Etta Powell, Superintendent of Cincinnati Schools in Ohio, described for the Subcommittee the collaborative project undertaken by Cincinnati schools and a variety of public and private community organizations concerned with the quality of education in inner-city schools. This model of collaboration is comprehensive in that it takes into account a myriad of factors in areas such as health, nutrition and housing that contribute to school failure. She also advocated for education research coordination at the Federal level, supervised by OERI, so that findings could be readily available to teachers, administrators and other practitioners.

In his testimony, Dr. Wornie Reed, Director, Trotter Institute of Black Culture, University of Massachusetts at Boston, proposed a Federal educational research agenda for disadvantaged students. Like Dr. Jaynes, Dr. Reed recognized that fiscal inequity between districts is a major reason for educational disadvantage and called

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[226] Oversight Hearing on OERI, Testimony of Dr. Linda Roberts, September 29, 1988, 41.
[227] Oversight Hearing on OERI, Testimony of Gerald Jaynes, September 14, 1989, 9.
[228] Oversight Hearing on OERI, Testimony of Robert A. Dentler, September 14, 1989, 90.

for a nationwide study to define the nature and extent of this phenomena. He delivered four other actions to improve educational research.

- Restoration by Congress of an adequate federally-funded research program on problems of minority education.
- Resumption of the Federal publication of current racial-ethnic data in education and publication of related data withheld from publication during the previous administration.
- Initiation of State-financed programs of research on equity concerns as part of the State responsibility for common school education.
- Setting goals of school-district-wide equality of achievement as the paramount provisions of any school reform program, and developing a research-evaluation plan to monitor implementation.[229]

Christopher Edley, Jr., representing the Committee on Policy for Racial Justice, offered seven propositions which he hoped would shape the debate about equal educational opportunity. Among these propositions is the assumption of equal human potential and responsibility, i.e., affirmation that all African-American children are capable of learning and it is the responsibility of the public school to educate them. Another proposition is that stereotyping, tracking and testing institutionalize and perpetuate social inequalities. In agreement with other witnesses (e.g. Mayberry), Mr. Edley recognized the need to increase the number of minority teachers, to research alternate instructional approaches and to encourage parental involvement in the educational process.

Paul T. Hill, Senior Social Scientist, the RAND Corporation, testified about the results of a study he conducted to find cities that were beginning to enhance their urban schools and to record the methodology so that other cities could replicate their activities. He stated that initially the key to improving urban education is the local leadership.

AFRICAN-AMERICAN MALES AND EDUCATIONAL ACHIEVEMENT

Dr. Michael Grady, Director, Office of Research and Evaluation and Dr. Warren Simmons, Equity Assurance Programs, Prince George's County Schools, presented a summary of their research in Prince George's County which identified (1) barriers to the achievement of African-American males and (2) solutions to existing problems. Their testimony discussed factors which contribute to the problems encountered by African-American males, such as:

1. Inadequate school funding
2. Lack of multicultural curricula
3. Instructional materials; library books
4. Shortage of African-American role models
5. Overenrollment of African-American males in the school system's special education program
6. Underrepresentation of African-American males in advanced academic groups

[229] Oversight Hearing on OERI. Testimony of Dr. Wornie Reed. September 14, 1989. 29–30.

They recommended several strategies to solve these problems including elimination of ability grouping and tracking, replacement of the Eurocentric curriculum with a multicultural one, thorough examination of the referral/assessment and treatment strategies used in special education programs and strengthening of mentorship and internship activities.

Dr. Jomills Braddock, II, Director of the Center for Research on Effective Schooling, recounted the dismal picture of African-American male educational achievement and offered various tested and proven effective interventions, both generic and targeted, e.g., single sex classes, cooperative learning models, strong teacher expectations and altering school incentive systems. He provided the Subcommittee with thought-provoking testimony on multicultural education, its feasibility and effectiveness:

> At present, we are in the second generation of calls for multicultural education, yet there is no solid evidence of its impact on student outcomes, although intuitively there are sound reasons for believing that it will have a positive impact on student outcomes apart from the justifiability of its inclusion to balance the overall curriculum. We sorely need systematic research on this issue if we are to improve the education of African-American males and other students.[230]

Dr. Curtis Banks, Professor of Psychology, Howard University, discussed and deconstructed several prevalent myths concerning the psychological make-up of African-American children (e.g., the African-American male has a negative self-concept, a lack of motivation, perceives himself as powerless and cannot delay gratification). Dr. Banks summarized his research that refuted these myths, offered his theory on why these myths persist, and recommended areas for future research regarding the education of African-American males.

Dr. Banks' testimony made clear that many of the prevalent myths and concomitant educational responses to them have been challenged empirically and found to be lacking in validity. He believes that problems African-American boys experience in school are related to their rate of selection for jobs, job productivity, promotion from entry level positions and rate of retention. In one endorsement of the intent of the proposed Institute Dr. Banks said:

> The kind of institute which this committee is considering could significantly advance knowledge and application for at-risk educational populations such as Black youngsters, in all . . . these areas. The establishment of grant programs to seed new research and to help especially new researchers could foster innovative knowledge development and re-attract the attention of both new and established scholars on this topic. The establishment of a professionally refereed journal, devoted to both basic and applied research, would add a needed source of dissemination for research and demonstration projects that reach out beyond the established paradigms and failed constructs of the 1960's and 1970's. The institute could also provide support for the application of developed pro grams and technologies.[231]

Dr. Henry Frierson, Associate Dean of Student Affairs and Academic Programs, University of North Carolina, stressed the urgency of the need for more African-American researchers, individuals in education research and development who, through personal as well as professional experience, are cognizant of and sensitive to the needs of African-Americans. He discussed the factors inherent

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[230] Oversight Hearing on OERI, Testimony of Dr. Jomills Braddock, II, September 27, 1990, 48.

[231] Oversight Hearing on OERI, Testimony of Dr. Curtis Banks, September 27, 1990, 43.

in the academic community that suppress the participation and subsequent production of African-American education researchers, e.g., ambivalence of the academic milieu, prejudice and discrimination, effects from the lack of solid protege-mentor relationships.

Dr. Frierson listed 12 recommendations to increase the number of African-American academicians which included collaborative efforts between OERI and educational institutions to provide incentives and opportunities for African-American researchers.

Dr. Norma Ewing, Professor of Special Education, Southern University, addressed the need for African-American teachers, strategies for increasing their ranks, and the impact more African-American male teachers could have on the mislabeling of students and the accelerating drop-out rates. She believes that one method to help reverse this trend is the creation of a national institute that would provide coordinated efforts on behalf of at-risk students.

An institutionalized, national, systematic approach that supports authentic, practical, legitimate, research, focused on minorities is warranted. . . . A national [institute] . . . is needed to focus national efforts and support, as well as collect and disseminate information in an area that has the masses either stymied or confused in terms of knowing what exist, where to go to access a repository of information, access strategies, models or innovative practices that exist.[232]

Dr. Ewing called for more relevant curriculum, more African-American male teachers, and higher teacher expectations.

Dr. Barbara J. Holmes, Director of Policy Studies, Education Commission of the States (ECS), spoke of the critical shortage of minority teachers nationally and presented an overview of the complexities of this problem, as well as the recommendations of the ECS study to recruit, train and retain minority teachers. One of the recommendations focused on data collection, a function appropriately undertaken at the Federal level.

Policy is often formulated in the absence of *complete data and information*. The Federal government should collect appropriate data and perform complete analyses so that trends can be ascertained quickly. Data analyses and findings must be reported regularly.[233]

Dr. Holmes also advocated Centers of Excellence for the Preparation of Teachers, using Federal and State funds, and located in HBCU's.

Institute for the Education of At-Risk Students

Insightful and thought-provoking testimony characterized the hearing held to discuss the establishment of an Institute for the Education of At-Risk Students.

New initiatives are needed to assist with the herculean task of improving education for large numbers of at-risk students. The largest proportion of such at-risk students are African-American and Hispanic who are located in our densely populated inner cities. At the same time, very intense problems face some rural communities where drastic population declines threaten the very existence of public education. The dimensions of these education failures and their negative consequences continue to expand out of control. An Institute for the Education of At-Risk Students can play a major role in reversing the present dangerous landslide into official helplessness.[234]

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[232] Oversight Hearing on OERI, Testimony of Dr. Norma Ewing, September 27, 1990, 95.
[233] Oversight Hearing on OERI, Testimony of Dr. Barbara J. Holmes, September 27, 1990, 155.
[234] Oversight Hearing on OERI, Statement of Congressman Major R. Owens, April 25, 1991, 2.

The educational crisis in this country affects most students, but is particularly acute for at-risk students who are disproportionately minorities. Chairman Owens called for new initiatives to improve education for large numbers of at-risk students in both urban and rural communities. The Institute for the Education of At-Risk Students would conduct intensive research and development activities and provide ongoing assistance to schools whose student population is predominantly at risk of educational failure.

Edmund Gordon, Professor of Psychology and Afro-American Studies at Yale University, presented several salient points regarding the establishment of the Institute. The first point was a caveat to avoid pitting at-risk groups against each other when funding activities. Secondly, he emphasized the importance of research and strategic planning, noting that demographics are rapidly changing and the educational problems we now face are increasingly complex. His third point was that research alone is not the solution to the educational crisis, a sentiment conveyed earlier by Keith Geiger, President of the National Education Association, who noted that

> Research alone cannot solve all of our Nation's education needs. Research can provide the compass, but we must assure that the ship itself is seaworthy.[235]

Dr. Gordon's fourth and fifth points addressed the question of perspective, i.e., avoiding the pitfall of "communocentric" bias and maintaining objectivity in research regarding at-risk students.

Keith Geiger emphasized the need to address not only the inequities in educational opportunity, but also the other social needs that at-risk children face.

> We must provide sustained, coordinated programs to meet the nutritional, health care, and safety needs of children and to establish and enhance basic support systems in the community at large.[236]

Linda Darling-Hammond, Professor and Co-Director of NCREST, Teachers College, Columbia University, implicated the politicization of research within OERI and the "instability and paltry size of the educational research budget" as part of the education R&D problem. She went on to say that even in this bleak climate, research has managed to produce some important findings.

> However, the synthesis of this knowledge in ways that will help us create targeted solutions to educational problems is not adequate. And the transmission of research findings in ways that make them useful to the field is not sufficient. . . . The proposal that you're considering for an Institute for the Education of At-Risk Students provides a very useful example of an organizational arrangement that could achieve the objectives of being mission-oriented and problem-focused and sustaining of that kind of interdisciplinary research across domains linked to dissemination and development capacities.[237]

Dr. Darling-Hammond suggested that activities the Institute could undertake include translating research findings into practices readily consumable by schools, funneling educational problems from the field to researchers as well as functioning as a clearinghouse and dissemination center.

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[235] Oversight Hearing on OERI, Testimony of Keith Geiger, April 25, 1991, 20.
[236] Oversight Hearing on OERI, Testimony of Keith Geiger, April 25, 1991, 19.
[237] Oversight Hearing on OERI, Testimony of Linda Darling-Hammond, April 25, 1991, 37.

We need ways by which we can train practitioners to be research users, and help them create the bridges needed to put research into practice as well as putting the needs and wisdom of practice into research.[238]

Dr. James Comer, Director of the Yale Child Study Center, in addition to offering suggestions on how the Institute can best serve at-risk students, stated that minority scholars have been underutilized by traditional research institutions and practices and their skills and backgrounds depreciated.

In many cases, we are spending a great deal of time and money researching issues which many scholars already have considerable insight and knowledge about because of their own personal experiences.[239]

Rather than discount the experience minority social and behavioral scientists bring to research, the Institute could value and incorporate their unique perspective into studies of at-risk populations. Dr. Shirley McBay, President of the Quality Education for Minorities Network, offered specific roles that minority researchers could fill

We think that it is essential that minorities have a major role in every aspect of the Institute's activities as participants in the creation of a research agenda as principal investigators in the research that will be conducted, as project directors in the development and the implementation of strategies growing out of promising research findings, and as members of the proposed governing board. We think what is needed is the long-term involvement and commitment of knowledgeable individuals with the experience in working with, and credibility within, minority communities from which the target groups disproportionately come.[240]

Dr. Comer added that his own work and experience over the past 22 years with the School Development Program is a case in point where major breakthroughs in school reform (e.g., school-based management, parent involvement, age appropriate instruction) were pioneered and are still considered cutting edge; yet, despite its proven effectiveness, has never been successful in securing funding from the Department of Education.

Todd Strohmenger, Director of the Rural Small Schools Program, Appalachia Educational Laboratory, highlighted the similarities and differences in at-risk students in the urban versus rural setting and elaborated on the unique problems in rural schools that could be ameliorated by the use of technology (e.g., computers on line) and the involvement of individuals with backgrounds which match the targeted audiences.

We need to use the 24 American Indian Tribal Colleges, the 114 Historically Black Colleges and Universities, the 10 Regional Laboratories across the country, and the numerous institutions working with rural schools and communities to find solutions.[241]

This sentiment was underscored by Louise Rendon, Associate Professor, North Carolina State University, who like Dr. Comer emphasized the need for minority researchers to be integral participants in the Institute's initiatives.

. . . The Institute should work closely with African-American, Mexican-American, Puerto Rican, Alaska Native, American Indian, and Asian-American scholars to outline the Institute's research agenda. Scholars who are closest to the issues, who know and understand the culture and experiences of at-risk students, and who are

[238] Oversight Hearing on OERI, Testimony of Linda Darling-Hammond, April 25, 1991, 40.
[239] Oversight Hearing on OERI, Testimony of James Comer, April 25, 1991, 16.
[240] Oversight Hearing on OERI, Testimony of Shirley McBay, April 25, 1991, 95.
[241] Oversight Hearing on OERI, Testimony of Todd Strohmenger, April 25, 1991, 83.

familiar with the limitations of past research should be supported by the Institute.[242]

Dr. Ruby Thompson, Professor at Clark Atlanta University applauded the Chairman's efforts to establish an Institute, especially to the commitment to inclusion and development of minority scholars and the recognition of the potential contribution of HBCUs in this effort. She noted that all too often HBCUs are excluded from participation in R&D programs and such a collaboration could build the capacity of these institutions to provide sustained, substantive, and pivotal research.

Dr. McBay envisioned a public policy initiative as one of the Institute's activities which would "formulate recommendations for educational policies and practices at the national, State, and local levels based on the findings of the Institute-sponsored research and demonstration projects."

BUDGET

Underfunding of Education Research and Development

OERI's budget was the focus of a great deal of testimony at the hearings due to a widespread perception, among education researchers and the Department officials alike, that education R&D within the Federal Government is underfunded. Long-term declines in funding were documented by a recent General Accounting Office (GAO) report, *R&D Funding: The Department of Education in Perspective*, which reveals significant declines in funding for education R&D in both current and constant dollars between 1980 and 1987. During that period education R&D declined 33 percent while defense R&D increased 81 percent. While Education accounted for 0.2 percent of the 1987 Federal R&D budget, Defense accounted for 64 percent, up from 44 percent in 1980.[243]

The Subcommittee asked GAO to compare Departmental requests with Congressional appropriations for the period 1980 to 1988. Trends documented in the GAO report show that, in general, Administration requests have exceeded Congressional appropriations over the past eight fiscal years. Nevertheless, Administration critics argue that Congress is reluctant to fund OERI because its research agenda has been politicized.

Denis Doyle contrasted the underfunding of OERI to the burgeoning, private sector investment in education R&D. Doyle, who served as research director for the Committee for Economic Development (CED)—a consortium of businessmen and educators that documented the economic cost of the Nation's high school dropout rate in an influential report, entitled *Children in Need*—stated:

> By way of illustration, look at the Federal Government's expenditures on education research. With the most generous definition of education research, it is hard to find as much as $100 million in the overall Federal budget. Contrast that to the amount we spend operating the Nation's elementary and secondary schools, about $150 billion per year. In turn, contrast that to the amount that a corporation like Xerox spends on research each year, $700 million.[244]

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[242] Oversight Hearing on OERI, Testimony of Laura Rendon, April 25, 1991, 90.
[243] United States General Accounting Office, "R&D Funding: The Department of Education in Perspective," *Report to the Chairman, Subcommittee on Select Education, Committee on Education and Labor, House of Representatives*, (Washington, DC: GAO/PEMD-88-18FS, May 1988) 6.
[244] Oversight Hearing on OERI, Statement of Denis Doyle, April 20, 1988.

Estimates of Need

Assistant Secretary Chester Finn estimated that in order for the Nation's public school system to match the private sector's investment in education R&D, the Federal Government would have to spend considerably more than its current funding level of $124 million. His reasoning was as follows:

> The total [spending] for all education institutions, schools and colleges in the country, as I said, is in the vicinity of $300 billion at the present time. Obviously, if 1 percent of that were being spent on research and development activity it would be $3 billion. . . . If you . . . got down to the fact that the Federal Government accounts for...about $20 billion out of the $300 billion, that is to say, about 8 percent, 7 percent of the total expenditure on education comes through the Department of Education, and if we had a $3 billion research budget and paid for 7 or 8 percent of it, we would be paying several hundred million a year—there is no doubt about that—through Department of Education sources alone for educational research.[245]

Causes of Underfunding

Witnesses at the April 20–21 hearings remarked not only upon the underfunding of OERI relative to other R&D agencies within the Federal Government, but also upon the causes and consequences of this state of affairs. The office of the presidentially-appointed director of NIE was abolished in 1985 when the National Institute of Education (NIE) was reorganized as OERI. Its functions were assumed by the Assistant Secretary for Educational Research and Improvement, a political appointee who reports directly to the Secretary of Education. This change, according to John E. Hopkins, Executive Director of Research for Better Schools, effectively politicized the education R&D apparatus and was viewed with distrust by Congress, which was subsequently less inclined to fund increases in OERI's budget. Regarding congressional skepticism of OERI, Hopkins said:

> We believe that the funding for educational R&D will increase when Congress is confident that the money will be used to support legitimate activity. The legitimacy of the activities will always be in question, though, when a handful of officials accountable only to themselves, determine both the research agenda and those who will carry it out. Unfortunately, the current structure of the Department of Education does not provide any separation between these functions. As long as that is the case, the situation is ripe for abuse. The structure needs to be changed.[246]

P. Michael Timpane, President of Teachers College at Columbia University, cites two reasons for the failure of education R&D to receive more Federal support: 1) the commonly held view that education R&D is less systematic or methodologically rigorous than other sciences; 2) partisanship in the selection of projects to fund. A lack of advocacy on the part of constituent groups was a factor as well, he indicated. Timpane acknowledges the difficulty in undertaking education research, because the learning process depends on human beings, whose behavior is unpredictable. However, he argues that it is misguided to abandon education research just because of the problems associated with it:

> To conclude that educational research ought not to be pursued because it did not, in its early work, succeed widely would be the most misguided of policies. What if we

[245] Oversight Hearing on OERI, Testimony of Assistant Secretary Chester Finn, April 21, 1988.
[246] Oversight Hearing on OERI, Statement of John E. Hopkins, April 21, 1988.

had made such a decision in the early days of this century, when modern research in medicine or agriculture was newly possible? I think the answer is obvious.[247]

Nathaniel Semple, Vice President and Secretary of the Research and Policy Committee of CED believes that education R&D has not been adequately funded in recent years because it has failed to document the economic returns on educational intervention in general. CED views education as an investment and is primarily concerned about the Nation's economic return on that investment. In his testimony, Semple cited the Perry Preschool Program as the most well-documented education research to date because it undertook a rigorous cost-benefit analysis to support its contention that preschool programs help disadvantaged youth. Since the early 1980's, financing for most of the follow-up work done by the High/Scope Educational Research Foundation on the Perry Preschool Program has come from private sources rather than Federal grants.

Consequences of Underfunding

Denis Doyle believes that the underfunding of education R&D has contributed to the declining competitiveness of the U.S. in world markets. To illustrate the importance of R&D in the corporate sector, he pointed to the experience of Xerox Corporation, which recently recovered its market share from Japanese competitors by undertaking an ambitious (and expensive) R&D effort. Doyle believes that only by making a comparable investment in education R&D, will American students become competitive with their counterparts in other industrialized nations.

Nancy Cole, President of the American Educational Research Association and Dean of the College of Education at the University of Illinois, believes that the lack of adequate resources has created a research base which is too narrow and has discouraged efforts to train new researchers. It has also fostered a climate which is hostile to education research. Cole believes that the Subcommittee can correct this situation:

(1) by establishing mechanisms for setting priorities and realistic funding targets for those priorities, (2) by marshalling bipartisan support for these directions, and (3) by ensuring that objective procedures for the award of grants and contracts are followed.[248]

According to Eleanor Chelimsky, the Director of the Program Evaluation and Methodology Division of the General Accounting Office, underfunding has affected the quality of education information generated by the Department of Education. In her testimony Chelimsky summarized the findings of a recent GAO report, *Education Information: Changes in Funds and Priorities Have Affected Production and Quality*, which documented significant declines in the number and quality of departmental awards for research, statistics and evaluation. This report also documented a shift away from new data collection efforts; the investigation of fewer areas, including areas critical to the education reform movement; and a shift away from individual research grants to institutional awards.

[247] Oversight Hearing on OERI, Testimony of P. Michael Timpane, April 20, 1988.
[248] Oversight Hearing on OERI, Testimony of Nancy S. Cole, April 21, 1988.

While shielding key programs from budget cuts, this shift has necessitated the deemphasis of field initiated studies.[249]

Chelimsky believes that the quality of education information has suffered because of marked decreases in funding for education information, even as overall Department of Education funding has increased 38 percent in real terms since 1972. While Chelimsky is concerned about underfunding, she does not believe that "merely providing more money will allow the department to recover from the losses engendered by the reductions in awards."[250] Rather, Chelimsky believes that increased oversight is required to strengthen the information gathering function of OERI.

Alan C. Purves, who is chairman of the International Association for the Evaluation of Educational Achievement (IEA), testified that international assessments of student achievement conducted by his organization have suffered for want of adequate funding. According to Purves, the United States government has cut back drastically on its support of IEA in recent years, and has made no long-term commitment to fund its participation in the tests. Purves views this as unfortunate since IEA's databases are among the best in the world for making international comparisons. Purves believes that IEA's work is critical to improving education systems worldwide. Yet because of a lack of commitment to IEA's efforts in the United States, the results of its assessments are not reaching American researchers.

James S. Coleman, Professor of Sociology and Education at the University of Chicago and author of the *Coleman Report* of 1966,[251] agrees with Purves that more researchers in the United States need IEA's data and that analysis of it should receive high priority. In his testimony Coleman cited IEA's recent preliminary report on international science achievement test results, *Science Achievement in Seventeen Countries: A Preliminary Report*, which documented the low level of academic achievement of American students.[252]

Coleman argues that because researchers focus more attention on teachers than students, "expenditures in education will be weighted toward direct transfers to schools, and from there to expenditures like summer salaries for teacher training, with a neglect of funding educational activities outside schools, or of giving educational consumers a voucher to invest (along with the child's time) in tutoring or another educational activity of their choosing."[253] Coleman recommends that the next administration redress this problem by restoring the Department's investment in education R&D, including research on activities that take place outside the school.

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[249] United States General Accounting Office, "Education Information: Changes in Funds and Priorities Have Affected Production and Quality," *Report to the Chairman, Subcommittee on Select Education, Committee on Education and Labor, House of Representatives*, (Washington, DC: GAO/ PEMD-88-4, November 1987).

[250] Oversight Hearing on OERI, Statement of Eleanor Chelimsky, April 20, 1988.

[251] United States Department of Health, Education, and Welfare, Office of Education, *Equality of Educational Opportunity*, (Washington, DC: U.S. Government Printing Office, 1966).

[252] International Association for the Evaluation of Educational Achievement (IEA), *Science Achievement in Seventeen Countries: A Preliminary Report* (New York: Pergamon Press, 1988).

[253] Oversight Hearing on OERI, Statement of James S. Coleman, April 20, 1988.

STRUCTURE

Existing System

Another issue discussed at the hearings was the impact of organizational structure on the education research process. The Federal education research apparatus consists largely of a system of regional educational laboratories, national research and development centers, and ERIC clearinghouses, which are coordinated by OERI. Judi Conrad, Associate Director of the ERIC Clearinghouse on Handicapped and Gifted Children and Chair of the Council of ERIC Directors, believes that the system suffers from fragmentation due to the absence of sufficient coordination at the national level. Fragmentation within the system of labs, centers, and clearinghouses is compounded by a lack of coordination among the State and local education R&D agencies and private educational efforts.[254] Lack of coordination within the ERIC system, in particular, has created a multiplicity of databases that are fraught with duplication.

Susan Fuhrman, who represented the American Educational Research Association's Organization of Research Centers at the hearings, described the goal of national centers as "mission-oriented, systematic, programmatic research." Because of their institutionalized settings and long-term contracts, they are ideal vehicles for conducting longitudinal research. Fuhrman expressed unhappiness with the Department's newly-created mini-centers, because their narrow scope detracts from the broad-based missions associated with the larger centers. Fuhrman is also critical of the Department's use of cooperative agreements rather than grants to fund the mini-centers, arguing that because of the high degree of Departmental involvement in them, "cooperative agreements hinder creation of the stable and predictable environment that centers need to accomplish their long-term missions."[255]

One of the hearing panelists, Christopher T. Cross, chaired a Laboratory Review Panel (LRP) that was created in 1987 to help Assistant Secretary Finn in evaluating the regional labs, with a view towards their reauthorization in 1991. The LRP critique makes the following observations: 1) the missions of the labs as detailed in their plans are vague; 2) the methods by which the labs have determined their priorities are also unclear; 3) the "with and through" strategy for servicing State education agencies needs further examination; 4) whether the labs should be proactive or reactive needs to be determined; 5) there appears to be little collaboration between the labs and other Departmental programs; 6) there is little collaboration among labs; 7) the labs provide few services to non-public schools; 8) the labs are subject to "over-regulation" and excessive reporting requirements from OERI; 9) the labs' funding mechanisms vary widely and need to be evaluated; 10) there are organizational and financial problems associated with the longevity of the labs; 11) the LRP is concerned about service strategies, financing and aspirations of three newer labs.[256]

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[254] Oversight Hearing on OERI, Testimony of Judi Conrad, April 21, 1988.
[255] Oversight Hearing on OERI, Testimony of Susan Fuhrman, April 21, 1988.
[256] Oversight Hearing on OERI, Statement of Christopher T. Cross, April 21, 1988.

The LRP's report includes the following recommendations for the Department: making programmatic realities more compatible with contractual requirements; eliminating long procedural delays in the Contracts Office; examining the labs' financial arrangements, including the use of fees to offset costs; making paperwork more relevant; examining the "with and through" strategy; examining the process of needs assessment; ensuring that OERI provides more coordination; examining the performance of the labs from the viewpoint of the field recipient.[257]

John Hopkins believes that the restructuring of OERI in 1985 effectively politicized its operations and that Congress should consider restoring the autonomy of OERI, just as it has done for the Center for Education Statistics in the recently enacted School Improvement Act of 1987. However, he also believes that prior to reauthorization, Congress should fund a commission such as the National Academy of Education or the National Academy of Science to "study new institutional arrangements for conducting education R&D." [258] Following authorization of the structure(s), the Subcommittee should adopt a supportive rather than combative oversight role.

As part of this recommendation, Hopkins advocates the creation of a half dozen *national* laboratories modeled after the Argonne and Brookhaven labs that would undertake longterm research on entire problem areas. These labs would supplement rather than supplant the regional labs.

AFT President Albert Shanker agrees that politicization of OERI has hampered systematic education research. However, he believes that this problem is not unique to the present administration:

> This peripatetic and politicized dance of priorities in educational research is not exclusive to the present Administration of the Department of Education and OERI, though it may be more extreme. It has been a problem at least since the creation of NIE, the forerunner of OERI, and has persisted despite various reorganizations.[259]

Elsewhere Shanker says:

> The history of our Federal education research effort as incarnated by NIE and OERI has been a short, troubled, and turbulent one. It has been marked by a surfeit of politics, short-term thinking, a declining budget and declining confidence, and much demoralization. There is tragedy in that, not only because the promise was so great but because so much good work has indeed been produced.[260]

Given that these problems have persisted despite changing institutional arrangements, Shanker does not recommend yet another reorganization. Rather, he advocates reconsideration of the basic pedagogical paradigm which has provided the basis for educational practice since the inception of public schools in the United States. This paradigm drives a research agenda that seeks incremental improvement rather than wholesale change.

In Shanker's view, unwillingness on the part of both researchers and practitioners to embrace new models is unique to education:

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[257] Oversight Hearing on OERI, Testimony of Assistant Secretary Chester Finn, April 21, 1988.
[258] Oversight Hearing on OERI, Testimony of Assistant Secretary Chester Finn, April 21, 1988.
[259] Oversight Hearing on OERI, Statement of Albert Shanker, April 20, 1988.
[260] Oversight Hearing on OERI, Statement of Albert Shanker, April 20, 1988.

> In any other field, for example, conflicting results or ambiguity signals a new point of departure, a redoubling of efforts. In education, it frequently spells the end of support for a line of research, a budget cut—or, at the very least, an occasion for ridicule. . . . I know of no other fields save education whose structure, technology and basic ways of operating (and problems) have remained unchanged for over 150 years.[261]

Shanker proposes a commission to study the problems associated with education research and to undertake a comparative analysis of how other Federal R&D agencies conduct research in their respective fields. While he is not optimistic that the education system will be transformed in the foreseeable future, he believes that a careful examination of the role of the Federal Government in education research will substantiate his claim that the existing model is inadequate.

DISSEMINATION

The GAO report on Education Information documented an increased emphasis on dissemination of research findings at the expense of new data collection efforts. Nevertheless, experts both inside and outside of the Department remain disatisfied with the results of the effort to translate promising research into improved practice. In a recent article, Assistant Secretary Finn commented,"[A]s of yet, much potentially valuable research information has made little impact on schools and classrooms. Perhaps this is because we have yet to come up with effective methods of translating research findings into forms that practitioners can use." [262] Faustine Jones-Wilson is particularly concerned about the lack of implementation of promising research findings developed under a whole host of programs for disadvantaged youth. Research results from the Perry Preschool, Head Start, Title 1, Chapter 1, Job Corps, and effective schools programs have been available for years. Yet, comments Jones-Wilson:

> My guess is that the average third grade teacher or average fifth grade teacher does not know what the research has uncovered, and the researchers in general do not go into the classrooms of our Nation to work with the teachers, so what we need here clearly is better articulation between the researchers and the information that they uncover, and the persons who are on the firing line who are supposed to implement those programs.[263]

In order to remedy this situation, Judi Conrad believes that a National Education Information Dissemination Policy is required. She also stated that:

> Implementation would have to be effected through a coordinating entity charged with responsibility for tracking the national RD&D efforts, analyzing the impacts of those efforts, communicating with all system participants, and otherwise promoting educational research, development, and dissemination as vital to the national welfare.[264]

PRIVATE SECTOR

Improving the quality of our current and future workforce is the impetus for private sector involvement in American education and

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[261] Oversight Hearing on OERI, Statement of Albert Shanker, April 20, 1988.
[262] Chester E. Finn, Jr., "What Ails Education Research," *Educational Researcher*, January/February, 1988, 8.
[263] Oversight Hearing on OERI, Statement of Faustine Jones-Wilson, April 20, 1988.
[264] Oversight Hearing on OERI, Statement of Judi Conrad, April 20, 1988.

most business associations have articulated their education improvement and strategies in policy agendas which include proposals for a major increase in Federal education research expenditures to help us achieve the National Education Goals. G. Carl Ball, Chairman of George J. Ball, Inc., offered three poignant reasons for increasing the funding of OERI: The paltry sum currently allocated education research, the need for sufficient funds to drive mission-oriented, goal-driven research, and the unconscionable consequences (e.g. illiteracy and ignorance) of not raising our education R&D investment.

William Lurie, President of The Business Roundtable, provided five recommendations on how OERI could assist in attainment of the National Educational Goals including: conducting more research and collecting data that could be used to assess our progress towards the goals; developing a common set of definitions so that key education indicators can be compared within and between States; playing a major role in identifying and developing national standards and methods to determine student achievement. William H. Kolberg, President of the National Alliance of Business, called for strengthening OERI's input by giving that office the responsibility for developing national educational standards and assessment measures. Nathaniel Semple, Vice President of the Committee for Economic Development, echoed Mr. Kolberg's appeal for OERI to take a leadership role in education R&D.

> Without OERI, we would never know from whence we have come, or where we are now, or where we are headed. And I can't imagine trying to improve anything in an environment like that.[265]

Dale Mann of the National Learning Foundation suggested "three initiatives to add new incentives and new, private sector energy for improvement"—an investment bank for education, expanded use of affordable, readily available middle technologies (e.g. telephones, VCRs) and public/private partnerships to link teachers and other educators with best practice resources. Like Mr. Mann, J. Berl Hogins, Co-founder and Senior Vice President of Jostens Learning Corporation, articulated the need to research new learning technologies as well as transferring knowledge from the business sector and the military.

ASSESSMENT

Mark Tucker, President of the National Center on Education and the Economy, reviewed several of the assessment issues (e.g., a national examination) addressed by his project and listed the proposals developed, including a system of national tests based on "a consensus of what students should know and be able to do," and a variety of assessment methods—portfolio, performance, group—designed to raise all students to a high standard. He purported that this approach would help eradicate the double standard, (i.e., one for white, well-to-do college-bound kids and the other for poor, minority kids) manifested in various forms of tracking.

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[265] Oversight Hearing on OERI, Testimony of Nathaniel M. Semple, March 20, 1991, 44.

The exams that we have in mind would provide to students multiple ways to demonstrate their competence; that is, the central idea of evaluating kids' performance on projects and on portfolios.

For minority kids, for kids who come from a nondominant culture in the United States, this will provide any number of ways to demonstrate competence that are now closed to them in the multiple choice tests that now largely determine their future.[266] He also stressed that school professionals must be held accountable for their student's performance and this cannot occur without what he refers to as . . . A very large-scale program of staff development to enable the professional staff of our schools to understand the standards, to develop curriculum that will get their students to meet those standards, and to learn the teaching techniques that will enable them to teach that curriculum.[267]

Eva L. Baker, Co-Director of the UCLA Center for the Study of Evaluation and Testing (CRESST), pointed out that technical issues must be given due consideration since they make a significant difference in student scores.

It matters if one student is assigned to write on an unfamiliar topic, and another has been specially prepared. It matters if a student paper is judged on its spelling or grammar for one student or its content and argument for another. It matters if these standards of rating are public or hidden from parents, teachers, and students. It matters if a student tries hard or is indifferent when it's time to take a test.

Obviously, technical issues matter most when individuals life's chances are affected by the score. We want to be very sure that results, which advance or deny student's choices, are trustworthy.[268]

Consequently, CRESST has developed technical criteria. Dr. Baker also stressed equity issues and questioned how a national test would impact special populations and students with a different first language; how they would be treated and if they, too, would have a fair chance at attaining high standards. One way to equalize opportunity is the provision of clear curricula that is not deflected by teachers, pressured to raise achievement scores, who teach to the test. Dr. Baker warned that the use of the National Assessment for Educational Progress (NAEP) as a national test would compromise NAEP's utility and the depth and breadth of classroom curricula.

We are asked to trade in a trusted indicator, conducted on a sampling basis, for a national experiment in testing. I think Congress should say no.[269]

Monty Neill, Associate Director of Fairtest, warned that a bad idea is receiving good press in President Bush's educational plan, namely, the modification of the NAEP into an interim national test. Like Dr. Baker, he claimed such a move would prove disastrous; corrupting tests and deflecting curricula, overtesting and undereducating students, and failing to develop staff. He called for the development and implementation of performance-based assessment as one component of comprehensive school reform.

If in our efforts to identify schools with achievement problems, we fail to provide models for improving practice in those schools and assistance to schools that develop responsible plans for improvement in the face of failed performance, then the national tests have the potential for serious adverse impact. Without such a complimentary component, a national testing program can be a costly enterprise that only exacerbates inequities.[270]

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[266] Oversight Hearing on OERI, Testimony of Mark Tucker, April 23, 1991, 17.
[267] Oversight Hearing on OERI, Testimony of Mark Tucker, April 23, 1991, 18.
[268] Oversight Hearing on OERI, Testimony of Eva Baker, April 23, 1991, 24.
[269] Oversight Hearing on OERI, Testimony of Eva Baker, April 23, 1991, 27.
[270] Oversight Hearing on OERI, Testimony of Joan Baratz-Snowden, April 23, 1991, 46.

This advice was offered by Dr. Joan Baratz-Snowden, Vice-President Assessment and Research, National Board for Professional Teaching Standards. She reiterated the concerns expressed by Dr. Neill regarding assessment and stated that developing fair alternative assessments take time and is expensive. Dr. Baratz-Snowden added that the assumption—improved student performance—which accompanies the call for national tests may be unrealistic.

> . . . schools will want to do well because the test results might affect resources, enrollment and employment. While this may be so, it does not necessarily follow that an increased desire for better performance will alone yield results.
>
> Schools with poor teachers cannot do better even if they want to without additional training and supports for those teachers . . . Then too, the assumption that students will learn more and learn better because the assessment now has consequences, needs to be tempered by the realization that marginal students who are not participating in the mainstream culture and who are threatened by the idea of assuming mainstream behaviors without any demonstration of the benefits of such achievement, in the long run, they may not recognize the value of these new credentials.[271]

Dr. George Madaus, Professor of the Center for the Study of Testing, Evaluation and Educational Policy, Boston College, questioned the purpose of a national examination, i.e., selection, certification, accountability, rewarding high achievers, helping students learn? Since one instrument can not effectively or efficiently serve all of these purposes, we must first determine what it is we want to achieve. Dr. Madaus briefly summarized the status of national tests in several European countries and compared the United States to these countries on several testing variables, e.g., grade level of testing, dealing with low achievers, inclusion of teachers in the examination infrastructure, development of tests, the use of test and test costs. He indicated that much can be learned from the European testing experience to spare us undue trials and spare students unwanted tribulations.

RESEARCH METHODS

At the April 21, 1988 OERI hearing, Charles Wallgren represented High/Scope Educational Research Foundation, one of the most respected institutions in the field of early childhood education and research. Wallgren related that High/Scope Foundation was created in 1970 by David P. Weikart to continue the work of the Perry Preschool Program and has received funding from both the Federal Government and private foundations.

To demonstrate its success in the area of early childhood intervention, Wallgren pointed to the results of a recent follow-up study of the Perry Preschool Program, which began in 1962. This study has revealed lower dropout rates, higher employment rates, fewer arrests and lower teenage birth rates among those who participated in the program. In addition a rigorous cost-benefit analysis demonstrated considerable taxpayer benefits in the form of reduced welfare payments and crime costs, as well as higher tax revenues garnered from program participants.

Wallgren provided the following description of High/Scope's model of longitudinal research: 1) research phase, consisting of ex-

[271] Oversight Hearing on OERI, Testimony of Joan Baratz-Snowden, April 23, 1991, 45.

perimentation at the local level; 2) development phase, consisting of curriculum development and teacher training; 3) demonstration phase, consisting of a single test at the local level; 4) dissemination phase, consisting of field testing at a number of sites; 5) implementation phase, consisting of regional implementation; 6) public policy phase, consisting of institutionalization of program at State and/or Federal levels in consultation with corporate decision-makers.

Wallgren explained that the Perry Preschool Program was a success because it was based on solid research and developed a consistently positive set of findings, including a cost benefit analysis that provided useful information to decision-makers. Another reason for High/Scope's success has been the commitment of top level management and personnel policies which have encouraged staff to stay with the organization.

Michael Kaplan, who is Director of Basic Research at the U.S. Army Research Institute, described the R&D model employed by the the Institute's training research laboratory which includes the following phases: 1) basic research; 2) exploratory development; 3) advanced development; 4) engineering or program development. In response to questions, Mr. Kaplan advised that his office has let:

> . . . some 60 research contracts, of which 80 percent have come to us from universities. We are approached by university scientists and others in very much the same way that the National Institutes of Health and the National Science Foundation are approached, and we review these proposals that we receive in an appropriate way for merit and for ultimate relationship to the applied programs that my institute has to deal with.[272]

Mr. Kaplan noted that training techniques developed by the Army Research Institute have been employed in a variety of settings, including General Motors and the State of North Carolina, and that the duration of its contracts is typically three years.

Manpower Demonstration Research Corporation (MDRC), another nonprofit corporation specializing in longitudinal research, was represented at the hearings by James Hyman, Vice President for External Affairs. According to Hyman, MDRC was established in 1974 by the Ford Foundation and the Federal Government to undertake demonstration research on voluntary education and training interventions for AFDC recipients. Since then it has undertaken social demonstrations of a number of different government-sponsored employment programs. Hyman believes that social demonstrations are useful in determining which programs "work." He defines a social demonstration as "a specific program model that is operated for a specified duration and subjected to rigorous evaluation to determine over some acceptable follow-up period, the impacts it has had on its participants." [273]

Hyman believes that demonstrations are most useful when: the solutions to problems are not already known; the problem has assumed national importance; the need for information about the problem and its solution(s) is critical; and there are only limited resources available to focus on the problem. Other requisites of useful demonstrations include: a solid research base; clearly specifiable and testable propositions; feasible application; carefully selected sites; available technical and operational assistance for site operators; and careful monitoring.

In discussing the feasibility of using demonstration research to test promising education programs, Hyman believes that ethics is a

[272] Oversight Hearing on OERI, Statement of Michael Kaplan, April 21, 1988.
[273] Oversight Hearing on OERI, Testimony of James B. Hyman, April 21, 1988.

45-063 O - 91 - 6

key concern; some educators object to withholding the benefits of promising programs from children in control groups. Another problem is the long-term nature of educational follow-up studies. Nevertheless, Hyman believes "that demonstration research, properly applied and managed, can be a valuable tool for policy and program development in education. It allows for the formulation of policy and the implementation and design of programs on the basis of approaches proven effective as opposed to approaches merely deemed to be good ideas." [274]

THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Testimony was heard attesting to the health and viability of the ERIC system and cautioning restraint when considering any modifications. However, several witnesses testified that the ERIC system—while a vital and unique educational data base—required modifications to enhance its efficiency and use. Assistant Secretary Finn stated that the dissemination methods would be altered so that statistical data and other information of interest to practitioners would be readily accessible.

If the ERIC system isn't perfect for scholars, it is really not very useful for practitioners and policy makers. It simply wasn't created with them in mind.[275]

He described the proposed addition of three components to the existing ERIC system: Access ERIC, adjunct clearinghouses and ERIC partners.

We propose to add Access ERIC to which you already referred. That is the largest and most important of these additions. Indeed, it was suggested to us initially by the council of ERIC directors. We have embraced their idea. It is a terrific idea. It would be a sort of front office for the ERIC system, a user-friendly operation designed to help ordinary people understand and utilize the resources of ERIC in a whole variety of ways.[276]

Mr. Finn also conceded that OERI had considered reducing the number of clearinghouses, but after Congressional intervention, reconsidered and subsequently, abandoned the idea. Chairman Owens expressed serious reservations about OERI's ability to implement the proposed changes without first garnering increased funding.

Concerns regarding the effects of level or reduced funding on the operation of the ERIC system were addressed by Lynn Barrett, Assistant Director of the ERIC Clearinghouse on Higher Education. In her testimony, she stated the underfunding has had a devastating impact on ERIC technical personnel.

ERIC personnel have left in a steady stream in the past several years for positions in academe, government, the private sector, and even the nonprofit sector. Key staff have been lost by every Clearinghouse and the ERIC Facility. There has been a steady brain drain as personnel levels have been reduced through attrition or budgetary induced layoffs. Every Clearinghouse and the Facility are now short-handed, with little or no backup for key jobs. Turnover has been especially high in the last four years, with at least two longstanding Clearinghouses having completely new staffs. The resulting loss of institutional memory is phenomenal systemwide.[277]

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[274] Oversight Hearing on OERI, Statement of James B. Hyman, April 21, 1988.
[275] Oversight Hearing on OERI, Testimony of Assistant Secretary Chester Finn, July 30, 1989, 13.
[276] Oversight Hearing on OERI, Testimony of Assistant Secretary Chester Finn, July 30, 1989, 13.
[277] Oversight Hearing on OERI, Testimony of Lynn Barrett, July 30, 1989, 70.

The picture was similarly bleak in the areas of training and technology where budgetary restrictions have curtailed the acquisition of equipment and hampered the development of ERIC users and technical personnel. Donald Ely, representing the Council of ERIC Directors (COED), noted:

> It is clear that ERIC is grossly underfunded and that it can be maintained only with additional financial support. To consider new elements at a time when current operations are hurting is putting the wrong emphasis on system improvement. New entities, however well-intended, do not solve problems. We need the new entities but, we also need the support that will help make them work. We urge this subcommittee to recommend an additional $4 million for ERIC to achieve the vision that has been presented for its third decade.[278]

Similar sentiment was offered by Charles Hoover, retired director of OERI, who provided a 20-point plan to enhance the ERIC system. Although, Mr. Ely expressed support for the three new initiatives proposed by OERI and indicated that COED wanted to have a voice in the process, he made it clear that COED would not support initiatives that may result in the reduction of clearinghouse budgets. This concern was underscored by Donald K. Erikson, Director of the ERIC Clearinghouse on Handicapped and Gifted Children, who described the ERIC Redesign Panel, its goals and accomplishments. He also expressed the general disappointment of the COED with the Panel's report which lacked a final set of recommendations and meaningful discussions for the conclusions reached. The panel endorsed the proposed changes to ERIC and identified 4 types of functions that ACCESS ERIC should undertake: referral, services, products, and revenue generation. Functions discouraged were computer searches for users and evaluation of clearinghouse activities.

[278] Oversight Hearing on OERI, Testimony of Donaly Ely, July 30, 1989, 88.

APPENDIX A

"RESPONDING TO CHILDREN AT RISK: A GUIDE TO RECENT REPORTS"

(153)

RESPONDING TO CHILDREN AT RISK: A GUIDE TO RECENT REPORTS

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(155)

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TABLE OF CONTENTS

	Page
Introduction	1
Overview of Recommendations	5
Recommendations for the Early Learning Years	7
Recommendations for the Middle Learning Years	15
Recommendations for the High School Years	23
Conclusion	28
Abstracts	29
1. First Lessons: A Report on Elementary Education	31
2. Reconnecting Youth: The Next Stage of Reform	33
3. Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools	35
4. Turning Points: Preparing American Youth for the 21st Century	38
5. An Imperiled Generation: Saving Urban Schools	40
6. The First 100 Days: A Children's Initiative -- Direction for President Bush and the 101st Congress	43
7. The Forgotten Half: Pathways to Success for America's Youth and Young Families	45
8. Children in Need: Investment Strategies for the Educationally Disadvantaged	47
9. Early Childhood and Family Education: Foundations for Success	50
10. A Guide for State Action: Early Childhood and Family Education	53
11. Assuring School Success for Students at Risk	56

Page

12. Improving Middle-Grade Schools: A Framework for Action 59

13. Drawing in the Family: Family Involvement in Schools 61

14. Dropouts in America: Enough is Known for Action 63

15. Before it's Too Late: Dropout Prevention in the Middle Grades 65

16. America's Shame, America's Hope: Twelve Million Youth At Risk 67

17. Too Late to Patch: Reconsidering Second-Chance Opportunities for Hispanic and Other Dropouts 68

18. Developmentally Appropriate Practice in Early Childhood Programs Serving Children From Birth Through Age 8 70

19. An Agenda for Excellence at the Middle Level 73

20. Right From the Start: The Report of NASBE Task Force on Early Childhood Education 75

21. Safeguards: Guidelines for Establishing Programs for Four-Year Olds in the Public Schools 77

22. Child Care in the Public Schools: Incubator for Inequality? 79

23. A Blueprint for Success: Operation Rescue 80

24. America in Transition: The International Frontier -- Report of the Task Force on Children 82

25. Results in Education (1987 and 1988) 84

26. Time for Results: The Governor's 1991 Report on Education 86

27. Dealing With Dropouts: The Urban Superintendents' Call to Action 88

Bibliography 91

INTRODUCTION

The issue of students failing to graduate from high school and failing to become productive citizens has increasingly concerned policymakers in the past several years. A broad spectrum of groups in the public and private sectors has shared this concern. These groups include national associations, commissions, philanthropic foundations, advocacy groups, state departments of education, public school systems, and business associations. Several such groups have studied the problem independently and have recommended various approaches for addressing it.

Their analyses and recommendations are contained in over two dozen reports published from 1985 to 1989. Most of the reports focus exclusively on at-risk youth; some deal with youth in general. Overall, the reports include recommendations for at-risk youth from the prenatal period to young adulthood. Individual reports differ as to the age span and other characteristics of youth whom they specifically target. They also differ as to the audiences that their recommendations are meant to inform and mobilize.

Despite these differences, the reports generally agree on a number of points.

- Children at risk form a growing proportion of all children. Responding to their needs has become a social imperative.
- The effort should comprehensively address the needs of children and their families.
- The effort will require a longitudinal approach emphasizing both prevention and intervention.
- The effort will require all levels of government and the private sector to exercise vision and leadership.
- The effort will require adequate resources, whether these are reallocated from existing sources or drawn from new sources.
- Schools, families, and communities share responsibility for responding to the needs of children at risk.
- Schools must assume new roles in the delivery and coordination of services to at-risk youngsters.
- Schools must change in order to meet the needs of at-risk youth.

This document is designed to serve as a guide to the major themes and recommendations of 27 reports on the problems of at-risk youth. It consists of an **overview** of recommendations from all the reports, **abstracts** of all 27 individual reports, and a **bibliography**.

The overview presents recommendations in three sections, according to the ages of children whose needs are considered. The section on the early learning years extends from the prenatal period to the upper elementary grades, or about age 9. The section on the middle learning years covers approximately ages 10 to 14. The section on the high school learning years ranges approximately from ages 15 to 24. Each section includes a handy key to the relevant reports.

The abstracts indicate the target youth population, summarize the overall thrust and list key recommendations for each report. As much as possible, the abstracts incorporate the exact terminology used in the original reports.

The bibliography lists the 27 reports in alphabetical order by author. As noted above, the overview also lists the reports, but groups them according to the age of youngsters targeted.

This guide originally was compiled for the Maryland Commission On Students At Risk. This commission was convened in 1988 by the Maryland State Superintendent of Schools and charged with recommending how the state should respond to the problem of at-risk youngsters. The commission's activities have been supported by funds from the Council of Chief State School Officers' project for state and local action to ensure education success for children and youth at risk, and matching funds from the Maryland State Department of Education (MSDE). MSDE staffed the commission with the assistance of Research for Better Schools.

The guide has now been expanded to serve a wider audience. It is designed to give educational decisionmakers access to the best current thinking on this significant national issue.

OVERVIEW OF RECOMMENDATIONS

6. Child Welfare League of America (1988), The First 100 Days: A Children's Initiative – Direction for President Bush and the 101 Congress

8. Committee for Economic Development (1987), Children in Need: Investment Strategies for the Educationally Disadvantaged

24. National Governor's Association (1989), America in Transition: The International Frontier – Report on the Task Force for Children.

Recommendations for the Early Learning Years

Recommendations of the individual early learning years reports reflect the primary interests of the various sponsoring groups. These include the economic consequences of the problem, the responsibilities of the state, or the developmental needs of the young child. However, there is one common theme expressed in varying ways in each: the importance of intervening early in children's lives in order to prepare and support them for school success and for productive citizenship when they leave school. The kinds of interventions recommended by these reports suggest a growing national consensus on how to meet the needs of young children at risk.

The following recommendations concerning the young child are presented as they relate to each of the significant time periods in a young child's life (0 to 9 years): prenatal, at birth, before school, and in school.

Prenatal

Discussions about young children at risk frequently include an understanding that the prenatal health and well being of the mother can contribute to a child's at-risk status. A mother's poor health can contribute to her own anemia and toxicity, and low birth weight, premature birth, and related problems (e.g., physical handicaps, neurological problems) in the child. Recommendations include:

- **Health**: provide prenatal and postnatal health care and nutritional guidance for pregnant teens and other high risk mothers (6, 8, 24).[1]
- **Education**: expand educational services, including parenting education, to pregnant teens (6, 8, 24).

At Birth

Birth provides the optimum moment for diagnosis of the infant's health needs, as well as the family's capability to meet the needs of their baby. The health community is in the best position to assess the needs of children and their families, and to set in motion the necessary follow-through on proposed interventions. The educational community is in a position to help at-risk families acquire essential parenting skills. Recommendations of the reports include:

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1. The numbers in parentheses throughout this overview refer to specific reports as listed in the boxes on even-numbered pages, the Table of Contents, and Bibliography.

6. Child Welfare League of America. (1988). The First 100 Days: A Children's Initiative -- Direction for President Bush and the 101st Congress.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

10. Council of Chief State School Officers. (1988). A Guide for State Action: Early Childhood and Family Education.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

20. National Association of State Boards of Education. (1988). Right From the Start: The Report of NASBE Task Force on Early Childhood Education.

24. National Governors' Association. (1989). America in Transition: The International Frontier -- Report of the Task Force on Children.

25. National Governors' Association. (1987 and 1988). Results in Education.

26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

- **Health**: provide follow-up health care and developmental screening for infants of teens and other high-risk mothers (6, 8, 24).

- **Education**: provide parenting education both for mothers and fathers, family health care, and nutritional guidance (6, 8, 24, 26).

Before School

From infancy until entering school, the family assumes the primary responsibility for meeting the physical, emotional, social, and cognitive needs of the young child. The child's growth and development is closely related to how well a family's basic needs are met: food, shelter, health care, employment, child care. The ability of families to meet their children's needs varies, and they may require various types of assistance. Recommendations from the reports on young children include:

- **Day care**: provide day care for mothers in school, preferably on site (8); expand quality child care services for poor working parents that stress social development and school readiness (6, 8, 20); assure standards of quality for day care programs (6, 18, 20, 24); stress continued improvement of developmentally appropriate programs in day care centers (26).

- **Parent education**: expand parenting education opportunities for families of young children (6, 10, 13).

- **Outreach**: develop outreach initiatives in expanding health and social services to young children and their families (6, 8, 24); mobilize support systems on behalf of disadvantaged families and children, e.g., home visitor programs, parent-child centers, and family resource programs (8, 13, 24); develop state and local collaborative structures through which various public and private agencies can provide appropriate programs for young children and new parents (13, 24, 26, 27).

- **Early childhood education**: provide early childhood education, especially for at-risk or handicapped children from birth to before school (10, 24, 25).

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

6. Child Welfare League of America. (1988). The First 100 Days: A Children's Initiative – Direction for President Bush and the 101st Congress.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

9. Council of Chief State School Officers. (1988). Early Childhood and Family Education: Foundations for Success.

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11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

20. National Association of State Boards of Education. (1988). Right From the Start: The Report of NASBE Task Force on Early Childhood Education.

21. National Black Child Development Institute, Inc. (1987). Safeguards: Guidelines for Establishing Programs for Four-Year-Olds in the Public Schools.

22. National Black Child Development Institute, Inc. (1985). Child Care in the Public Schools: Incubator for Inequality?

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

24. National Governors' Association. (1989). America in Transition: The International Frontier – Report of the Task Force on Children.

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During School

Children may enter school in their preschool years (ages 2 to 4), as kindergartners (ages 5 to 6), or as first graders (ages 6 to 7). At school entry, the school takes on some responsibility for meeting the child's cognitive, social, emotional, and physical needs. The condition and support of the family are important components of children's early success in school. Recommendations of the reports on young children express concern for the quality of the educational experience, as well as for the comprehensive needs of children and their families.

- **School-based early childhood programs**: provide high quality preschool experiences for 3 to 4 year olds, with appropriate teacher-student ratios, certified early childhood teachers, parent education, and developmentally appropriate programs (5, 8, 9, 10, 11, 24, 26); provide publicly supported child care for preschool children at risk (9, 10, 20, 24).

- **Elementary school programs**: establish early childhood units in elementary schools to serve children ages 4 to 8 that also serve as focal points for enhanced services to children and their families (5, 20); unlock the chronological structure for children entering and progressing through the system (1); assure that the curriculum is challenging and appropriate (comprehensive, integrative, age- and individual-appropriate, relevant, engaging, etc.) for all children (5, 18 ,26); provide school experiences that are responsive to cultural and linguistic diversity (10, 18, 20, 21, 22); require the integration and extension of developmentally appropriate programs and other elements of high quality early childhood services into upper elementary education (10).

- **Monitoring of student progress**: use a variety of measures to assess the progress of young children, to plan for meeting their needs (10, 18, 20, 21, 23, 25); monitor the academic and social progress of children carefully and early in order to provide the coordination of services and special help before children experience failure (5, 10, 11, 25, 26, 27).

- **Families as partners**: strengthen home-school relations by building partnerships with parents (5, 6, 10, 11, 13, 18, 20, 21, 24, 26, 27); train staff on family involvement and education (10, 13).

- **Support services for children and families**: provide before- and after-school child care (9, 10, 20); provide comprehensive and supporting health and social services for young children and their families that are characterized by interagency cooperation (10, 11, 20, 21, 23, 24, 25); provide adequate child nutrition programs (5, 6, 10, 21); provide parent

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

6. Child Welfare League of America. (1988). The First 100 Days: A Children's Initiative – Direction for President Bush and the 101st Congress.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

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26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

education programs that strengthen the capacity of families (6, 9, 13, 21, 26).

- **Networking**: create a network of support for schools that includes parents, colleges, the corporate community, and state government (5, 8, 10, 13, 24, 26).

- **Quality/standards**: assure standards of quality for early childhood programs in terms of developmentally appropriate programs, staff training, adult-child ratios, year-round full-day programs, evaluation (9, 10, 18, 20, 21, 24); reduce teacher-child ratios (10, 18, 26); monitor at regular intervals schools that serve large numbers of disadvantaged children (5, 8).

- **Federal support**: expand federal support and resources for early childhood education and related child care for children at risk and for family education, with universal access for all children and families (5, 6, 10, 24).

3. California State Department of Education. (1987). Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools.

4. Carnegie Council on Adolescent Development. (1989, June). Turning Points: Preparing American Youth for the 21st Century. Report of the Task Force on Education of Young Adolescents.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

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12. Dorman, Gayle. (1987). Improving Middle-Grade Schools: A Framework for Action.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

14. Institute for Educational Leadership. (1987). Drcpouts in America: Enough is Known for Action.

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24. National Governors' Association. (1989). America in Transition: The International Frontier – Report of the Task Force on Children.

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26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

Recommendations for the Middle Learning Years

The education of youngsters from age 10 to 14 has recently appeared on the national policy agenda. Largely ignored during this decade of ferment in educational policy, early adolescents and the middle schools or junior high schools that serve them are now receiving increased attention. The recommendations from the national reports on the middle learning years display a fair amount of consensus.

Reports numbered 3, 12, 13, 15, and 19 contain recommendations pertaining to the overall or fundamental school experience that should be available to all youngsters in the middle learning years. Reports numbered 4, 5, 8, 11, 14, 15, 23, 24, 26, and 27 contain recommendations pertaining to the special school programs or services that should be available to at-risk youngsters in the middle learning years. Selected themes from these reports are highlighted below.

School Reform

The theme of school reform or restructuring is expressed in several ways in these reports. It includes a call for the reform of all the elements of middle years schooling (3), as well as a call for renewed leadership, vision, and commitment to educating all children (15). Further, there is a call to review or introduce state policies (that is, formal leadership statements) that would help schools move in new directions (4, 13).

The need to reform or restructure education for at-risk youngsters is an evident and central premise in almost all the middle school reports focusing on the at-risk problem. This recommendation is sometimes stated as a general need (4, 15, 16, 23, 25, 27); sometimes as the need for a commitment to educating all children (5, 11, 26); and sometimes as the need for renewed leadership and vision (23). Advocacy for legislative action at the national, state, or local level (4, 5, 11, 15, 16) and for informing the public about the problem of at-risk youngsters (16, 25, 27) also reflects the theme of school reform.

Developmentally Appropriate Approaches

The recommendation to use developmentally appropriate approaches for all youngsters emerges strongly in nearly every middle years report. The reports stress using developmentally appropriate approaches to curriculum and instruction, and stress the need to personalize middle years education, especially for at-risk youth. Specifically, the reports recommend the following practices.

3. California State Department of Education. (1987). Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools.

4. Carnegie Council on Adolescent Development. (1989, June). Turning Points: Preparing American Youth for the 21st Century. Report of the Task Force on Education of Young Adolescents.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

6. Child Welfare League of America. (1988). The First 100 Days: A Children's Initiative – Direction for President Bush and the 101st Congress.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

12. Dorman, Gayle. (1987). Improving Middle-Grade Schools: A Framework for Action.

14. Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action.

15. Massachusetts Advocacy Center and The Center for Early Adolescence. (1988). Before It's Too Late: Dropout Prevention in the Middle Grades.

16. MDC, Inc. (1988). America's Shame, America's Hope: Twelve Million Youth at Risk.

19. National Association of Secondary School Principals. (1985). An Agenda for Excellence at the Middle Level.

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

25. National Governors' Association. (1987 and 1988). Results in Education.

26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

- **Challenging core curriculum**: institute a core curriculum by first deciding on a set of learnings that all students should acquire during the middle years; make the curriculum challenging and hold out high expectations (3, 4, 5, 11, 19, 26, 27), especially for at-risk youngsters (11, 26, 27).

- **Exploratory curriculum**: expand students' base of experience and capitalize on their acute curiosity (3, 12, 15, 19), suggested means are making elective courses available, as well as exposing students to varied content and applications in their coursework and co-curricular activities. One report particularly emphasizes vocationally-oriented experiences for at-risk youngsters (15).

- **Multi-cultural content**: use students' cultural diversity as content for courses and co-curricular events and activities (15, 23).

- **Personalized education**: personalize education for all middle years youngsters (3, 4, 8, 11, 12, 14, 15, 23, 25, 26, 27), strategies include providing opportunities for self-exploration, remediation, individualization, and alternative education (3, 12, 15). Reports on at-risk students particularly stress these strategies: remediation or tutoring (4, 14, 15, 25, 26), individualized learning plans (6, 8, 11), and alternative programs in schools or in separate settings (15, 25, 27).

- **Restructured schedules**: extend some class periods and vary time blocks within the school day (3, 4, 15); this serves to enhance students' relationships with teachers and peers, to give all students access to all programs, and to provide enough time for implementing more varied activities and interdisciplinary units. The restructuring of schedules that is suggested for at-risk students includes longer school days and longer school years (4, 5, 14, 15).

- **Active learning**: utilize physical activity, varied means of instruction, and cooperative learning as illustrative forms of active learning for all young adolescents (3, 4, 15, 16, 19).

- **Personal relationships**: provide personal attention for students, extended contact with teachers, and a rewarding environment for students and adults (3, 4, 5, 8, 12, 19, 23, 27). For at-risk youth, the need for small school units and personal attention is stressed (4, 5, 8, 23, 27).

4. Carnegie Council on Adolescent Development. (1989, June). Turning Points: Preparing American Youth for the 21st Century. Report of the Task Force on Education of Young Adolescents.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

12. Dorman, Gayle. (1987). Improving Middle-Grade Schools: A Framework for Action.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

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15. Massachusetts Advocacy Center and The Center for Early Adolescence. (1988). Before It's Too Late: Dropout Prevention in the Middle Grades.

16. MDC, Inc. (1988). America's Shame, America's Hope: Twelve Million Youth at Risk.

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

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26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

Adequate Resources, Facilities, and Staff

Most reports focusing on the needs of youngsters in general in the middle years are silent about resources and facilities, apparently because adequate funding and suitable facilities exist. The one report that explicitly mentions resources is seeking support for parent involvement activities (13). In contrast, several reports focusing on middle grade students who are at risk explicitly discuss the need for adequate, equitable funding and suitable facilities (4, 5, 11, 16, 25).

The need for staff to be adequately trained to work with young adolescents across the board surfaces in reports on middle grade youngsters (3, 19). The need is underlined in reports on at-risk youth. These reports recommend the provision of continuing staff development opportunities (8, 11, 14, 23, 25, 26, 27). One report specifically mentions the state's role in providing some training and other technical assistance (26). The need for preservice education and specialized middle grades certification also is discussed (4).

Ongoing Evaluation

Several of the general middle years reports recommend developing new methods for assessing student and program performance (3), and using evaluation information routinely to guide ongoing school improvement (3, 12, 15). Similarly, a number of reports on at-risk youth recommend evaluating programs, assessing student progress, and conducting research into the education of at-risk youngsters (4, 5, 8, 11, 15, 25, 26). These reports suggest that this information be used both to monitor long-term school improvement efforts and to adjust short-term instructional plans for students at risk. In addition, two reports advocate holding schools or school systems to certain performance standards (11, 26).

School-Based Decisionmaking

While several reports focusing on early adolescents in general imply greater decisionmaking power for those involved in teaching and learning, only one stipulates that principals should control their own budgets, staffing, and physical plant (19). Reports on at-risk youth urge reliance on school-based leadership and shared decisionmaking in planning and implementing programs for at-risk youth (4, 5, 15, 23).

3. California State Department of Education. (1987). Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools.

4. Carnegie Council on Adolescent Development. (1989, June). Turning Points: Preparing American Youth for the 21st Century. Report of the Task Force on Education of Young Adolescents.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

14. Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action.

15. Massachusetts Advocacy Center and The Center for Early Adolescence. (1988). Before It's Too Late: Dropout Prevention in the Middle Grades.

19. National Association of Secondary School Principals. (1985). An Agenda for Excellence at the Middle Level.

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

24. National Governors' Association. (1989). America in Transition: The International Frontier – Report of the Task Force on Children.

25. National Governors' Association. (1987 and 1988). Results in Education.

26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

Partnerships

Reports recommend that schools join with parents, community groups, governmental agencies, businesses, and institutions of higher education to improve schooling for middle years youngsters in general (3, 13, 19). These partnerships are described at various stages and levels of the reform effort. For example, parents are encouraged to help set school rules (3) or review state regulations (13), and schools are encouraged to adjust activities to accommodate families' schedules (19).

All but one middle years report addressing the needs of at-risk youth feature the need for schools to collaborate with one or more partners (4, 5, 8, 11, 14, 15, 23, 26, 27). A range of partnership activities is suggested. However, most of these reports recommend interagency or other collaborative relationships to ensure at-risk youth access to health and social services (4, 8, 14, 15, 23, 25, 27).

Articulation

Two reports for all middle years youngsters recommend articulation among schooling levels (3, 19). This entails coordinating curriculum as well as easing the transition for students and their parents. This theme also emerges in one report's recommendations for at-risk youth (23).

Brokered Services

The need for schools to provide counseling and health care services for youngsters who need them is suggested for all middle years youngsters (3, 15, 24), but especially for youngsters at risk (4, 5, 8, 11, 14, 15, 23). Use of a case management approach -- assigning a single contact person or advocate to coordinate access to various services that at-risk youngsters need -- is also proposed (14, 27).

2. Business Advisory Commission. (1985, October). Reconnecting Youth: The Next Stage of Reform.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

7. Commission on Work, Family, and Citizenship. (1988, November). The Forgotten Half: Pathways to Success for America's Youth and Young Families.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

14. Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action.

16. MDC, Inc. (1988). America's Shame, America's Hope: Twelve Million Youth at Risk.

17. Miller, S. M., Nicolau, S., Orr, M. T., Valdivieso, R., & Walker, G. (1988). Too Late to Patch: Reconsidering Second-Chance Opportunities for Hispanic and Other Dropouts.

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

24. National Governors' Association. (1989). America in Transition: The International Frontier -- Report of the Task Force on Children.

25. National Governors' Association. (1987 and 1988). Results in Education.

26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' call to Action.

Recommendations for the High School Years

By the time youngsters reach high school age, many who were at risk in earlier grades have already experienced school failure. They may have failed one or more courses, been held back one or more grades, or spent much of their school career tracked into remedial education. Some drop out. Others remain enrolled, but attend irregularly and exhibit other disengaged or disruptive behaviors. Still other youngsters who were not previously at risk slip into circumstances or behaviors that place them at risk during their high school years.

All but two of the high school reports contain recommendations that deal explicitly with at-risk youth. These reports (2, 5, 7, 8, 11, 14, 16, 17, 23, 25, 26, 27) refer to these youngsters as at risk, disadvantaged, potential dropouts, or dropouts. The other reports (13, 24) include but do not distinguish at-risk youngsters in their recommendations. Selected themes from the reports are described below.

Vision and Leadership

All the high school reports call for wide participation in the exercise of leadership and the generation of solutions to the at-risk problem.

- **Public awareness**: build a broad and bold consensus to change things for youngsters at risk during the high school years (2, 5, 7, 8, 11, 13, 16, 17, 23, 24, 25, 27). Of these reports, some (2, 5, 11, 23) emphasize the need for commitment -- to the belief that all children learn, to the goal of educating all children, and to risk-taking on their behalf. Some (2, 5, 8, 16, 23, 25) cite the need specifically to restructure schools around a new vision of education. Several reports (17, 23, 27) advocate developing multiple approaches to the problem. Still other reports (2, 7, 13, 16, 25, 27) focus on gaining visibility and public agreement by mounting media campaigns, establishing state-level agencies, or passing legislation.

- **Adequate resources**: make adequate resources available for appropriate facilities, services, and programs (2, 5, 7, 8, 11, 13, 14, 16, 23, 24, 25, 26, 27). Over half of these reports (5, 11, 16, 23, 25, 26, 27) underscore the need to support staff development. Two reports (5, 16) recommend equalizing state funding to assure adequate resources for at-risk efforts, while another (2) recommends looking to private as well as to public funding sources.

2. Business Advisory Commission. (1985, October). Reconnecting Youth: The Next Stage of Reform.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

7. Commission on Work, amily, and Citizenship. (1988, November). The Forgotten Half: Pathways to Success for America's Youth and Young Families.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

14. Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action.

17. Miller, S. M., Nicolau, S., Orr, M. T., Valdivieso, R., & Walker, G. (1988). Too Late to Patch: Reconsidering Second-Chance Opportunities for Hispanic and Other Dropouts.

23. National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue.

25. National Governors' Association. (1987 and 1988). Results in Education.

26. National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education.

27. The OERI Urban Superintendents' Network. (1987). Dealing With Dropouts: The Urban Superintendents' Call to Action.

- **Partnerships**: encourage partnerships and collaboration between schools and other groups (2, 5, 7, 8, 11, 13, 14, 17, 23, 25, 26, 27). Individual reports name various potential partners, including colleges; business; labor; local, state, and federal governments; social service agencies; and youngsters' families. A majority (7, 8, 11, 13, 14, 23, 26, 27) recommends strengthening or, in some cases, redefining the relationship between parents and schools. The high school reports generally see collaboration as enlisting the creative, material, political, or symbolic resources that the partners control. However, the specific purposes of the proposed partnerships vary in individual reports. For example, collaboration is to increase at-risk youth's access to the mainstream economy (7, 14), as well as to deliver comprehensive health and social services to youngsters (8, 11, 14, 23) and, in one case, to their families as well (7).

Provision of Special Programs

Almost all the high school reports call for providing at-risk youth with special programs or services.

- **Alternative programs**: provide either education in alternative settings (2, 8, 17, 25, 26, 27) or adoption of the features typically associated with such programs. These features include smaller school units or classes (2, 5, 8, 27), flexible scheduling to allow full-time, weekend, or year-round classes (5, 14, 17), and more personalized instruction and interactions between students and adults (2, 11, 14, 17, 23, 27). Some reports (7, 8, 14, 17) propose mentoring, career guidance, and personal counseling that is as intensive and sustained as necessary. One report (7) also suggests after-school care programs for adolescents.

- **Links between education and work**: tie education and work together for at-risk youth (2, 7, 8, 14, 17, 27). The reports provide examples of various models. One report (17) describes three such arrangements: apprenticeships for on-the-job training, computer-assisted instruction in basic skills in the workplace, and instruction in job-related basic skills. Other reports (2, 7) advocate giving at-risk youth the opportunity to perform meaningful community service. Two reports (14, 17) recommend providing monetary and emotional incentives that at-risk youth especially value. These incentives could be associated with the work or service that youth perform.

45-063 O - 91 - 7

2. Business Advisory Commission. (1985, October). Reconnecting Youth: The Next Stage of Reform.

5. Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools.

8. Committee for Economic Development. (1987). Children in Need: Investment Strategies for the Educationally Disadvantaged.

11. Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk.

13. Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools.

14. Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action.

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- **Pregnancy prevention and education for teen parents**: provide special programming to prevent teen pregnancies or to support teens who become parents (8, 13, 14, 17, 27). Aimed at young men and women, pregnancy prevention programs would provide comprehensive health and support services (8, 14, 24, 27). Other programs would help teens who become parents stay in school by providing daycare for their young children (8, 27), teaching them parenting and other skills (8, 13, 17, 24), and involving them in their children's education (13).

Revision in Current Schooling Practice

Fully three-fourths of the high school reports call for changing current schooling practices to better accommodate youth who are at risk in the high school years.

- **Curriculum renewal**: change the regular school curriculum; however, the reports disagree on exactly what changes should be made (2, 5, 8, 11, 14, 23, 25, 26, 27). Some reports (2, 5, 11) suggest offering all students a common curriculum. This implies ending the widespread practice of tracking at-risk students into vocational or remedial curricula. Other reports favor offering all students a challenging curriculum (25, 27) that could include remedial work in basic skills for at-risk students (14, 25, 26). Other recommended changes include providing technology (8), adequate technical training (11), and student-centered curriculum and instruction (23).

- **Evaluation and accountability**: make better use of data on student progress and on school programs (5, 8, 11, 14, 17, 25, 26, 27). Several reports (11, 14, 17, 27) recommend specific measures or procedures for data-gathering. These and other reports (5, 8, 11, 17, 25, 26, 27) urge that schools assess student performance and programs accurately and base their decisions about appropriate interventions on that information. A number of reports (5, 8, 11, 14, 26) connect use of evaluation data with the idea of increased accountability.

- **School-based decisionmaking**: change conventional forms of school governance (5, 14, 23, 27). The new forms are described as school-based leadership, school-based management, and shared or participatory decisionmaking. Although the terms differ, they all mean a greater role in decisionmaking for school-site staff, and sometimes for parents, students, and others.

Conclusion

These recommendations were synthesized from reports by various organizations with disparate missions, agendas, and priorities. They are united, however, in their common concern for improving the circumstances of children at risk. The abstracts that follow provide more of the distinctive character and language of the 27 individual reports and their approaches for dealing with this important issue.

ABSTRACTS

1. **William J. Bennett. (1986). First lessons: A Report on Elementary Education. Washington, DC: U.S. Department of Education.**

Target Population: Kindergarten through eighth grade.

Summary

Former Secretary of Education Bennett notes that since 1953, no major national report has examined the condition of elementary education. This report is his effort to assume that responsibility, which he considers to be of great importance. The secretary named a study group of 21 distinguished educators to deliberate on the issue. In addition, the report was informed by staff research, studies undertaken by public and private organizations around the country, and correspondence from interested individuals and groups. Nevertheless, the secretary emphasizes that this statement expresses his own view. The report describes the condition and direction of elementary education, as well as makes recommendations in four areas: (1) children, parents, and the community of adults, (2) curriculum, (3) school professionals, and (4) school policy.

Recommendations

Seven recommendations were offered by the study group:

- The principal goals of elementary education are to build for every child a strong foundation for further education, for democratic citizenship, and for eventual entry into responsible adulthood.
- The community of adults should exercise responsibility for nurturing, caring for, and educating children.
- Teachers should be granted certification based on demonstrated knowledge and skills, rather than on paper credentials.
- The requirements for becoming a principal should be deregulated in order to attract more accomplished people from many fields other than education.
- Schools should increase learning time.
- Schools should unlock the chronological way that children enter and progress through the system.

- Curriculum improvement can be achieved by:
  - -- teaching all students to read
  - -- incorporating writing into the whole curriculum
  - -- providing "hands on" experimental activities in science
  - -- emphasizing problem solving in mathematics
  - -- encompassing history, geography, and civics into the social studies for the youngest students
  - -- integrating the arts and instruction in the arts into all content areas
  - -- providing basic training in computers
  - -- including health and physical education
  - -- establishing a library and encouraging children to use it.

2. **Business Advisory Commission. (1985, October). Reconnecting Youth: The Next Stage of Reform. Denver, CO: Education Commission of the States.**

Target Population: Youth 14 to 24 years old.

Summary

This report treats the problems presented by America's entry-level labor force, an increasing proportion of whom are disconnecting from school, from work, and from mainstream society. Despite their poor motivation, literacy skills, and work habits, these youth can no longer be overlooked by employers. The report asks policymakers and leaders in business, labor, and education to stimulate discussion in their various sectors and to reaffirm roles for each in improving opportunities for youth. The report calls on leaders in all sectors to take action:

- Increase visibility of the problem.
- Organize new, more effective partnerships and coalitions.
- Coordinate currently fragmented programs, agencies, and organizations.
- Develop community and state service opportunities.
- Raise public and private resources.
- Take the risks necessary for getting action.

The report briefly describes selected programs that it considers exemplary.

Recommendations

At the time of the report, writers judged that alienated youth were being served neither by education as then structured nor by recent reforms. The report's recommendations for education leaders seek to reconnect alienated high school students -- potential or actual dropouts -- to school:

- Restructure schools; suggestions to consider include:
  - -- schools within schools and other means to establish smaller ratios of students to adults and longer associations between students and a set of teachers
  - -- more interactive instruction, use of peer teaching and other cooperative learning techniques

- -- reduction of tracking, especially for vocational and general students
- -- simplification of the curriculum
- -- creation of magnet schools and classes.

- Provide genuinely alternative programs that effectively can invite dropouts to drop back in.
- Expand cooperative relationships among secondary schools, community colleges, and four-year post-secondary institutions.

3. **California State Department of Education. (1987). Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools. Sacramento, CA: Author.**

Target Population: Grades 6 through 8.

Summary

This reform agenda for the middle grades in California is the product of a year's worth of research and open hearings. Its authors intend it to stimulate discussion and debate. The case is made for the urgency of major educational reform in grades 6, 7, and 8. Academic integrity and an intellectually stimulating school environment are stressed, as is the need for attention to the personal and social development of young adolescents. The report emphasizes the unfolding intellectual power of young minds and the corresponding need for new instructional strategies and organizational models which can translate the principles of middle grade educational reform into the real world of students and teachers. The report keys its recommendations to more than 20 principles, which are grouped in five areas: curriculum and instruction, student potential, organization and structure, teaching and administration, and leadership and partnership.

Recommendations

The principles and illustrative examples of recommendations that would facilitate implementation in the middle school include:

- Achieve academic excellence through curriculum and instruction; every middle grade student should:
  - pursue a common, comprehensive, academically oriented core curriculum as well as study elective and exploratory curricula
  - develop the capacities for critical thought and effective communication
  - be helped to personalize ideals and to develop the ability to make reasoned moral and ethical choices
  - develop a repertoire of learning strategies and study skills to promote reflective thought and systematic progress toward independent learning
  - be the object of instructional practices that emphasize active learning strategies. Active learning strategies should be consistent with the goals of the core curriculum and the developmental characteristics of

young adolescents (e.g., use of student projects, paperbacks, videos, and other materials supplementary to textbooks).

- Realize students' potential for intellectual, social, emotional, and physical development; every middle grade student should:

  -- receive timely information about the relationship between middle and high school curricula and be encouraged and assisted to attain content mastery that will provide opportunities for exercising the broadest range of later academic options (e.g., no automatic tracking by primary language, handicap, or general ability). Underrepresented minority students should be offered special efforts and incentives

  -- participate in educational programs that foster personal commitments to academic achievement (e.g., extended time blocks to allow for personal relationships with teachers and cooperative learning; peer tutoring)

  -- receive specific primary health care services and counseling if indicated (e.g., school-based student study teams, advising programs, and clinics; access to community services through interagency collaboration).

- Create new learning environments through organization and structural changes; every middle grade student should:

  -- experience a school culture which reflects a student-centered philosophy

  -- have access to and be encouraged to take part in extracurricular and intramural activities which feature participation, interaction, competition, and service

  -- be accountable for significant standards of academic excellence and personal behavior (e.g., participate with parents and school personnel in formulating rules)

  -- experience a successful transition among elementary, middle, and high schools (e.g., gradual movement from self-contained to departmentalized organization, inter-school visitation, and assignment of welcoming mentors for students)

  -- attend a middle school that is configured to include grades 6, 7, and 8, and that is funded by the same state formula as elementary and high schools

- -- experience a school schedule that directly reflects other principles of middle grade education and that facilitates equal access by all students to the full range of academic and student support programs (e.g., differentiated and/or alternating time blocks for various subjects, including counseling and guidance programs)

- -- experience programs that are assessed comprehensively, where the data are applied to improve programs and services (e.g., development of nontraditional assessment measures, reports to local communities).

- Prepare for exemplary teaching and administration; middle grade teachers and principals should:

  - -- have specialized training in middle grades core curriculum, instructional strategies, and young adolescent development

  - -- participate in comprehensive, long-range staff development programs which emphasize professional collegiality.

- Define the leadership and partnership catalysts for reform:

  - -- parents, communities, and school boards should share accountability for middle grade educational reform (e.g., hold local forums to discuss recommendations)

  - -- local school districts, institutions of higher education, and the State Department of Education should promote the creation and funding of 100 model middle schools.

4. **Carnegie Council on Adolescent Development. (1989, June). Turning Points: Preparing American Youth for the 21st Century. Report of the Task Force on Education of Young Adolescents. New York, NY: Carnegie Corporation of New York.**

Target Population: At-risk youth 10 to 15 years old.

Summary

The Carnegie Council on Adolescent Development looks on early adolescence as a significant turning point for future life choices. Especially concerned with youngsters who are vulnerable to multiple high-risk behaviors and to school failure, the council conferred with selected experts in health, school-community relations, and schooling, reviewed papers on these subjects, and visited a handful of schools across the country. The council concluded that schools potentially are society's most powerful force to turn at-risk youth around. However, the current organization and curriculum of schools render them unfit for the task. The council's report summarizes the risks for young adolescents and suggests how schools should reconstitute themselves to meet the intellectual and emotional needs of all children, and of at-risk children most of all.

Recommendations

The report presents the following recommendations for middle grade schools:

- Create small communities for learning. Various configurations can promote the desired intimacy and stability. These include schools-within-schools, teams, and assignment of adult advisors.

- Teach a core of common knowledge. This core academic program would teach youngsters to think critically, to develop healthy and ethical lifestyles, and to become responsible citizens. Youth service would be included along with more traditional course work; courses themselves would be organized around interdisciplinary study. New approaches to assessment would have to accompany these new curricular emphases.

- Ensure success for all students. Instructional arrangements that would support this recommendation include cooperative learning techniques (such as small group activities and cross-age tutoring) to substitute for tracking, flexible scheduling within the school day and in an extended school day or year, and adequate resources (staffing, facilities, and materials) and contractual authority to carry these out.

- Empower teachers and administrators for school decisionmaking. This recommendation would give teachers a role in schoolwide governance, as well as greater control and responsibility over the time and specific content of their own instructional program. Serving with teachers in the governance structure could be other school staff, parents, students, and community representatives. A house leader or lead teacher would perform some coordinating and administrative duties for each subunit within the school and also would participate in schoolwide governance.

- Employ staff who are expert in working with young adolescents. This would entail preservice preparation in early adolescent development, cultural differences, teamwork, and one or more subject matters. Middle grades certification or endorsement on teachers' licenses would reflect their special training.

- Foster youngsters' health and fitness. Schools can accomplish this recommendation by providing access to health and counseling services and by becoming health-promoting environments. This should include assignment of on-site health coordinators and consideration of school-based clinics.

- Engage families in their young adolescents' education. Schools can foster meaningful relationships with parents by communicating with them about school programs and student progress, helping them support learning at home and in school, and enabling them to participate in school governance.

- Connect schools with communities. School-community collaboration should entail use of community resources to support curricular and co-curricular activities -- including career guidance and the identification of student service opportunities within the community -- and the establishment of formal partnerships to facilitate student access to health and other social services.

The report also specifies what other groups can do to expedite the implementation of these recommendations in schools. For example, leaders in higher education are asked to institute changes in preservice education of middle grades teachers. States are asked to convene task forces to consider the recommendations as well as new policy mechanisms for motivating change. National leaders are urged to establish a comprehensive federal policy for youth development. The private and philanthropic sectors are encouraged to extend their efforts on behalf of early adolescents and to participate in a continuing national forum on middle grades education.

5. **The Carnegie Foundation for the Advancement of Teaching. (1988). An Imperiled Generation: Saving Urban Schools. Lawrenceville, NJ: Princeton University Press.**

Target Population: Urban school children.

Summary

This report focuses on what the Carnegie Foundation for the Advancement of Teaching perceives as today's most urgent educational challenge -- the improvement of urban schools. The report expresses the concern that the reform movement of the early 1980s, launched to upgrade the education of all students, is irrelevant to many children in urban schools and has bypassed the most deeply troubled schools. Primary data sources for the report were visits to six cities, where students, teachers, and principals were interviewed and school conditions and procedures were observed. Based on these data, the report proposes a comprehensive program representing the best practices of which the foundation was aware. The proposal consists of the following priorities:

- commitment to educate all children
- new governance procedures
- an educational renewal program for the local school
- partnerships to link the school to a network of local, state, and federal support.

For each priority, the report describes current school conditions and problems, and recommends ways to address these problems. The report also proposes creation of a national Urban Schools Program. Proposed provisions include increased funding for Head Start, child nutrition, and Chapter I; subsidized afternoon and summer enrichment for poor children; teacher renewal through institutes and teacher centers; loans for school construction and refurbishing; grants for school innovation; and incentives for higher education to establish special relationships with urban schools.

Recommendations

The report recommends action in its priority areas:

- Affirm that every student can succeed. Urban schools should have high expectations for all students, not just the most advantaged. They should provide developmentally appropriate approaches to learning.

- Build an effective governance structure. Elements should include:
  - -- school-based leadership and decisionmaking
  - -- school board support through provision of adequate financial resources, selection of qualified administrators and teachers, and recruitment of groups and agencies seeking to enrich school programs
  - -- regular evaluation of school goals, procedures, and student progress
  - -- review of unsatisfactory progress by a team of education officials, parents, teachers, and college faculty.
- Create a network of support beyond the school. Connections should be forged with parents, higher education, corporations, and the state. States should avoid tedious regulation and should assure greater equity in financing.
- Introduce at every school a comprehensive program of renewal; elements should include:
  - -- small school units
  - -- clearly defined school goals and a core curriculum
  - -- flexible scheduling arrangements (e.g., weekend programs, extended school year, and early college entry)
  - -- good facilities and equipment.
- Introduce a program of renewal specifically for the early learning years which includes:
  - -- adequate child nutrition programs
  - -- community health projects
  - -- Head Start or an alternative preschool program to every eligible child
  - -- an ungraded basic school with small classes and an emphasis on language (reading, writing, communication) for children in kindergarten to fourth grade
  - -- parent involvement

-- good facilities through refurbishing schools and providing learning resources, such as libraries and laboratories, all of which is supported by federal funding.

6. **Child Welfare League of America. (1988). The First 100 Days: A Children's Initiative -- Direction for President Bush and the 101st Congress. Washington, DC: Author.**

Target Population: Pregnancy through high school.

Summary

Formed in 1910 in response to a call by President Theodore Roosevelt for the first White House Conference on Children, the Child Welfare League of America (CWLA) is now the oldest voluntary organization in this country concerned with the improvement of care for abused, neglected, and troubled children. It is comprised of 525 public and voluntary agencies and 1000 affiliates. In October 1987, the CWLA initiated a non-partisan public education campaign, the Children's Presidential Campaign. The goal was to place children's issues high on the agenda of every presidential candidate in the coming election. As part of the campaign, CWLA developed a 12-point program to form the basis of a national policy for children and families. To continue the process, CWLA produced the present document. **The First 100 Days** is both a conceptual framework and a list of specific recommendations for executive and legislative branch action. These recommendations have been solicited from member agencies, and are thought to represent the best thinking in child welfare practice. Some of these recommendations are directly related to the primary concerns of child welfare advocates (e.g., child abuse and neglect, adoptions, income security; others are of special interest to educators.

Recommendations

Congress should provide the following assistance to young children and their families:

- Establish a health care financing mechanism so that all Americans, of all ages, working or non-working, have either public or private health insurance to cover physical and mental health care.
- Review all existing federal programs that affect children and their families, and craft comprehensive new legislation that would initiate a national commitment to preserve and strengthen families through a broad range of supports (e.g., prevention and intervention).
- Increase funds for existing food and nutrition programs for children.
- Fund fully the Women, Infants, and Children (WIC) program so that all eligible low-income women, infants, and children can be served.

- Reintroduce and pass the Act for Better Child Care, which would establish a framework for the provision of high quality, affordable, and accessible child care in every state, including family and center care, with training, monitoring, and upgrading of salaries and standards.

- Fund fully the Head Start program.

Congress should provide the following assistance to adolescents at risk:

- Establish and fully fund comprehensive programs for pregnant adolescents, young parents, and their children.

- Pass the Voluntary National Youth Service/American Conservation Corps Act, which would establish a youth work program modeled after those of the 1930s.

- Pass a major youth employment bill to improve the Job Training Partnership Act, with emphasis on assisting disadvantaged youth.

- Promote and fund youth participation programs emphasizing peer support to prevent teen pregnancy, suicide, and substance abuse.

- Increase federal funding for Chapter 1 Compensatory Education programs.

7. **Commission on Work, Family, and Citizenship. (1988, November). The Forgotten Half: Pathways to Success for America's Youth and Young Families. Washington, D.C.: The William T. Grant Foundation.**

Target Population: Non-college bound youth 16 to 24 years old.

Summary

This report focuses on the needs of the estimated 20 million youth from age 16 to 24 whose schooling ends with a high school diploma or less. Often viewed by society and themselves as failures, these young people face more limited futures than did non-college bound youth a generation ago. In the coming years, they can expect underemployment or unemployment, and correspondingly constrained opportunities for supporting families or enjoying material success. The report documents a pattern of underinvestment in American youth generally and in this group specifically. To provide the needed opportunities for service, education, employment, and training, the report advocates examining existing programs and expanding those that work well. In addition, the report suggests consolidating existing delivery systems, targeting efforts for at-risk youth and others with acute problems, and intervening with those who missed prevention or early intervention programs.

Recommendations

The report recommends four major strategies to help non-college bound youth enter the adult world successfully. Recommendations, especially those with implications for schools, are highlighted below.

- Enhance the quality of youth-adult relationships. Given the increasing strains on American family life, the public and private sectors should increase their responsiveness to working parents. Examples related to education include the need for:

  -- new forms of parent involvement in schools

  -- development of after-school care for older children and adolescents

  -- mentoring programs

  -- revision of welfare regulations to accept fathers' participation in education and training programs as part of the required parental obligation.

- Expand community supports for families and individual opportunities for service; examples for schools include:

- -- development of systems for coordinating the full array of developmental, preventive, and remedial services for families through community schools or other means

- -- creation of attractive opportunities for youth to serve their schools and communities.

- Extend and improve employment and training opportunities; examples for schools include:

  - -- creation of alliances or compacts of business, education, and community resources to monitor and reward individual achievement

  - -- development of approaches to ease the passage from school to work

  - -- establishment of special funds to improve schooling as outlined.

- Support legislation for demonstration projects designed to increase access to post-secondary education.

8. **Committee for Economic Development. (1987) Children in Need: Investment Strategies for the Educationally Disadvantaged. New York, NY: Author.**

Target Population: All disadvantaged children.

Summary

The Committee for Economic Development (CED) is an independent nonprofit, nonpartisan, and nonpolitical research and educational organization of over 200 business executives and educators. In 1987, CED reported its recommendations for meeting the special needs of the growing underclass of the educationally disadvantaged. The report urges business leaders, educators, and policymakers to look beyond the traditional classroom boundaries and provide early and sustained intervention in the lives of these children. The report calls for partnerships among families, schools, businesses, and community organizations that can bolster the health, education, and well-being of the whole child, beginning with the formative years. The report recommends that policymakers adopt a three-part strategy for improving the prospects of disadvantaged children, specifically:

- prevention through early intervention -- programs that focus on children from birth to age five and on teenagers who are most at risk of premature parenthood
- restructuring the foundations of education -- changes that are needed in the structure, staffing, management, and financing of schools
- retention and re-entry -- targeted programs that combine comprehensive educational, employment, health, and social services for students still in school and for dropouts.

Brief descriptions of promising programs are also included.

Recommendations

Early learning years intervention programs should accomplish the following:

- Provide prenatal and postnatal health care and nutritional guidance for pregnant teens and other high-risk mothers and follow-up health care and developmental screening for their infants.
- Keep pregnant teens and those with babies in school.

- Provide parenting education for both mothers and fathers, family health care, and nutritional guidance.
- Provide day care for mothers in school, preferably on-site.
- Provide quality child care arrangements for poor working parents that stress social development and school readiness.
- Provide quality preschool programs for all disadvantaged three- and four-year-olds.
- Mobilize support systems on behalf of disadvantaged families and children to provide home visitor programs, parent-child centers, and family resource programs.

Until now the "neglected alleyway of educational reform," middle and junior high schools, should become a major focus of reform. CED recommends the restructuring of schools to provide a productive educational environment. Such an environment would include skilled and caring teachers and administrators, a safe and inviting facility, stimulating academic curriculum, and necessary social supports. This would entail new and comprehensive research and restructuring along general lines, as well as adoption of the following measures:

- Provide for smaller schools, smaller classes, and more individualized instruction.
- Develop resources for better guidance and counseling.
- Encourage greater parental involvement.
- Establish specialized teacher training and recruitment.

High school programs for disadvantaged youth should accomplish the following:

- Provide smaller, alternative settings that focus on improving students' motivation, skills, and self-esteem.
- Combine work experience and basic skills training.
- Improve career and personal guidance services and institute mentoring programs.
- Integrate up-to-date technology into the curriculum.

- Help pregnant teens and teen mothers to stay in school, for example, by providing prenatal and parenting education and on-site day care for teens' children.
- Develop new relationships with parents and communities for meeting the special academic, social, and health needs of disadvantaged adolescents.
- Assure continuous funding.
- Provide for ongoing evaluation of students' progress and program success.
- Hold school districts, administrators, and staff members accountable for the performance of schools serving large numbers of disadvantaged children.

9. **Council of Chief State School Officers. (1988). Early Childhood and Family Education: Foundations for Success. Washington, DC: Author.**

Target Population: Birth through age 5.

Summary

The Council of Chief State School Officers (CCSSO) has explored ways to meet the myriad needs of children and their families in order for children to gain maximum benefits from school. The council developed three related documents: (1) a statement on the nationwide importance of early childhood and family education, (2) state-by-state profiles on state actions to meet the comprehensive needs of children ages zero through five and their parents, and (3) a guide for state action, delineating steps for state involvement in early childhood and family education and related services.

The CCSSO statement calls for the creation of new ways of supporting families and assuring that each child's earliest years provide the foundation for a creative life. It focuses on the responsibilities of educators and calls for the establishment of 11 state guarantees for at-risk children and youth, including provision of early childhood and parent education programs. The council believes that the single most important investment to be made in education is the provision of high quality programs for the nation's youngest children, especially for those who are most at risk, and for their families. This investment must be accompanied by strategies for establishing strong standards of quality and the assurance of broad and deep collaboration among agencies at each governmental level and across levels.

CCSSO calls for direct, creative, and expanded assistance to young children and their families based on the following principles:

- All children should have equal access to high quality early childhood programs and service.
- All families should have access to assistance that will help care for and educate their children.
- Each child should have access to early childhood programs that assist in developing a full range of fundamental social, emotional, physical, and cognitive abilities.
- Early childhood developmental programs should be extended into and integrated with the elementary school program.
- Resources and programs for young children and families should be coordinated to assure availability, effectiveness, and comprehensiveness.

Recommendations

The CCSSO suggests the following strategies for change:

- Make available high quality early childhood services for all children, with concentration of public resources on early childhood programs for children at risk.

- Strengthen capacities of families by providing needed assistance, including:

  -- programs that reach new parents and establish supportive partnerships to help their children

  -- support in fulfilling family roles at home

  -- assurances that the patterns and scheduling of formal schooling will be consonant with previous experiences of the children

  -- sensitivity to the culture of the family.

- Assure standards of quality for early childhood programs that will require:

  -- a developmentally appropriate approach

  -- prepared and supported staff

  -- appropriate adult-child ratio

  -- a length of program day, year, and continuous learning environment matched to family needs

  -- evaluation of programs and child progress based on developmental goals.

- Collaborate broadly for comprehensive services to young children and families:

  -- supported by the public and policymakers through interagency and intergovernmental forums to establish clear goals and solutions for children's needs, to implement services jointly, and to provide continual evaluation of progress

-- encouraged by the leadership of schools

-- required by statutory provisions

-- supported by increased funding.

10. **Council of Chief State School Officers. (1988). A Guide for State Action: Early Childhood and Family Education. Washington, DC: Author.**

Target Population: Birth through age 5.

Summary

The Council of Chief State School Officers (CCSSO) has explored ways to meet the myriad needs of children and their families in order for children to gain maximum benefits from school. The council developed three related documents: (1) a statement on the nationwide importance of early childhood and family education, (2) state-by-state profiles on state actions to meet the comprehensive needs of children ages zero through five and their parents, and (3) a guide for state action, delineating steps for state involvement in early childhood and family education and related services.

The guide is designed to assist each state assess its current early childhood and family education policies and programs by drawing upon the collective experience of other states. The information was collected primarily by a CCSSO study commission survey on early childhood education, child care, parental education, and health and social services programs for young children. It provides the most comprehensive set of descriptions to date on state and agency action to address the complex needs of young at-risk children and their families. The expectation is that chief state school officers could use this guide in setting the direction and determining the best actions for implementation of programs in their states.

The guide provides recommendations for action in support of high quality early childhood and family education in five areas: the state policy role, coalitions and coordination, program guidelines, staffing, and national support. The guide also presents an overview of the unmet needs of children at risk and the barriers to comprehensive service, as well as examples illustrating how these have been addressed or resolved in some settings. The guide describes the federal context of state efforts to provide early childhood and family education, and concludes with policy recommendations.

Recommendations

The guide's recommendations are listed by the five areas below:

- State policy role, states should:
  - -- provide comprehensive and accessible early childhood and family education services for all children from birth
  - -- establish a state council and encourage establishment of local councils to advise in planning for delivery of comprehensive services
  - -- establish standards and regulations to ensure high quality comprehensive services (including but not limited to: developmentally appropriate practices; family involvement and education; appropriate adult-child ratios, facilities, staff training and credentialing; and optional full-day and full-year schedules)
  - -- develop multiple measures for assessing the readiness and development of children
  - -- fund the services through existing federal, state, and local resources as well as new public and private funding
  - -- serve as an example for other state agencies and the private sector by establishing models of early childhood services for their employees.
- Coalitions and coordination, states should:
  - -- develop an integrated policy and action plan
  - -- acknowledge, build upon, and enhance successful systems and providers (both non-profit and for-profit)
  - -- establish coalitions of educators, human services providers, business leaders, and citizens to assist with securing funding, ensuring access, and providing staff training for the delivery of services.
- Program guidelines, states should:
  - -- ensure that programs contain child care and developmentally appropriate education components, and be sensitive to the culture and language of the child and family
  - -- require the integration and extension of the developmental approach and other elements of comprehensive high quality early childhood services into elementary education

- -- establish a data collection and monitoring system which identifies the needs of young children and promotes the coordination of services for them.

- Staffing, states should:

  - -- establish competency-based standards for different staffing levels, as well provide quality supervision and ongoing training on site

  - -- establish early childhood staffing training programs on family involvement and education.

- National support, states should:

  - -- participate in the development of a national clearinghouse on model programs, effective practices, and relevant research

  - -- place on the national education agenda resources for the continuation of research on early childhood services

  - -- push for the federal resources to support universally accessible services.

11. **The Council of Chief State School Officers. (1987). Assuring School Success for Students at Risk. Washington, D.C.: Author.**

Target Population: All at-risk students, preschool to grade 12.

Summary

In 1987, the Council of Chief State School Officers (CCSSO) issued a statement presenting the council's beliefs about the problems of students at risk. The statement set forth "guarantees" that states should implement to assure that at-risk children and youth receive the educational and supporting services essential for educational success. These guarantees were based on the following principles:

- In each state there must be an equitable opportunity for each person to earn a high school diploma at public expense.
- Each person, with the rare exception of severe disability, has the capacity to meet the standards for a high school diploma.
- Recognizing that different individuals learn in different ways, how students are successfully taught should vary; what each student learns, however, must include a challenging and common curriculum.
- The nation's chief education officers are obligated to provide education programs and to assure other necessary related services so that this nation enters the 21st Century with virtually all students graduating from high school.

The statement acknowledges that local, state, and federal governments all contribute financial support for education. However, the CCSSO stresses that the state bears the fundamental responsibility for elementary and secondary education. Moreover, states must lead the way to provide resources for uniformly high quality programs, to strengthen the practice of teaching, to provide help and incentives for increasing schools' effectiveness, and to guarantee all children a genuine opportunity for high school graduation backed by affirmative practices for children at risk.

Recommendations

Of the guarantees, one pertains specifically to early childhood and three pertain to early elementary school:

- States should guarantee a parent and early childhood development program ideally beginning for children by age three, but no later than age four.

- States should guarantee a program for participation of families as partners in learning at home and at school as their children proceed toward high school graduation.

- States should guarantee effective supporting health and social services to overcome conditions which put the student at risk of failing to graduate from high school.

- States should guarantee education information about students, schools, school districts, and the states to enable identification of students at risk and to report on school conditions and performance. The information must be sufficient to let one know whether the above guarantees are being met and to provide a basis for local and state policies to improve student and school performance.

According to the CCSSO statement, for children and youth at risk of failure to graduate from high school:

- States should guarantee quality program and supplementary educational services that are integrated with the regular program and are necessary for making progress toward high school graduation.

- States should guarantee enrollment in a school which demonstrates substantial and sustained student progress.

- States should guarantee enrollment in a school with appropriately certified staff which has continuous professional development.

- States should guarantee enrollment in a school with systematically designed and delivered instruction of demonstrable effectiveness, and with adequate and effective learning technologies and materials.

- States should guarantee enrollment in a school with safe and functional facilities.

- States should guarantee an individual learning guide mapping the way to high school graduation, prepared with parental and student input and approval.

- States should guarantee a program enlisting parents as partners in learning at home and at school.

- States should guarantee health and social services effective in overcoming conditions which put the student at risk.

- States should guarantee education information about students, schools, school districts, and state systems to enable identification of students at risk, diagnosis of school needs, and monitoring of progress.

- States should guarantee procedures to assure these guarantees are met.

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12. **Dorman, Gayle. (1987). Improving Middle-Grade Schools: A Framework for Action. Carrboro, NC: Center for Early Adolescence.**

Target Population: Middle school grades.

Summary

This monograph describes the Middle Grades Assessment Program (MGAP) of the Center for Early Adolescence as a tool to help schools become more academically productive and developmentally responsive. The description includes a brief characterization of early adolescence and a revised definition of effective schools. Both inform the criteria MGAP uses in its instruments for assessment and school improvement planning. According to MGAP, effective middle grade schools are:

- safe
- academically effective
- responsive to young adolescents' developmental needs for diversity, competence and achievement, structure and clear limits, meaningful participation in school and community, self-exploration and self-definition, positive social interaction both with peers and adults, and physical activity.

Case studies of MGAP efforts in 11 schools are included. The monograph states that the MGAP approach works because it is a participatory, building-based process that promotes and reinforces commitment to school improvement. Among the lessons drawn from the case studies are that schools are capable of assessing and improving themselves, but that participants' energy flows unevenly during the effort; the effort must begin with a clear statement of goals and responsibilities; the principal and teachers play crucial roles; and supervisors, students' parents, and citizens are also instrumental.

Recommendations

MGAP experience suggests that successful middle school improvement must meet several conditions. These include:

- Those adopting the MGAP approach should first accept the MGAP criteria for defining successful middle grade schools.
- The school principal must be receptive to critical scrutiny of the entire school and be prepared for the intense momentum for change that may ensue.

- Leadership for the assessment must be clearly defined, acknowledged, and accepted.
- The principal and faculty must perceive a problem that an assessment could illuminate and be willing to address it.
- The principal and faculty must be at least minimally competent and functioning in a school at least minimally safe and orderly.
- The school and district administration should guarantee that they will not undermine the use of assessment findings in the improvement effort.

13. **Education Commission of the States. (1988). Drawing in the Family: Family Involvement in Schools. Denver: Author.**

Target Population: School-age children.

Summary

In this report, the Education Commission of the States (ECS) advocates that states enact policies to enhance parent involvement because parent involvement guarantees children's success in school. Three ways to increase parent involvement are seen:

- Involve parents from the very beginning of parenthood.
- Raise the nation's consciousness about the importance of parent involvement.
- Reach out to parents at the local level.

The report contains examples of activities or programs parents and educators can undertake, descriptions of selected state programs, and recommended state actions. Some references to supporting research are also included. Individual chapters treat connecting families and schools, improving the home environment, and improving the school environment. Recommended strategies for state action are grouped under three main headings: provision of leadership, encouragement of innovation, and support for legislation.

Recommendations:

The report acknowledges that programs for involving parents in secondary schools are rare, but affirms their effectiveness in improving student achievement. The report also notes that teenage parents -- in or out of school -- should be included with other types of families in parent involvement programs.

While stressing the centrality of schools themselves in involving parents, the report outlines how states can help:

- States can provide leadership. For example, states can create an hospitable climate for parent involvement and raise public awareness about the economic and social benefits of involvement in the schools.
- States can encourage innovations. To help schools implement programs, state can provide creative funding, develop and/or recognize exemplary

programs, provide training and other technical assistance, and identify and coordinate governmental and community resources.

- States can support legislation. States can be proactive in supporting new legislation that promotes parent involvement and reactive in clearing away restrictive legislation. Other legislative or administrative actions include initiating interagency collaboration, naming parents to state accountability committees, and establishing state offices for parent involvement.

14. **Institute for Educational Leadership. (1987). Dropouts in America: Enough is Known for Action. Washington, D.C.: Author.**

Target Population: At-risk children (potential and actual dropouts).

Summary

This report was sponsored by the Institute for Educational Leadership(IEL) to determine how much was known about attacking the problem of school dropouts. After reviewing research, existing programs, and policy trends, the authors concluded that enough was known to make a start. The report itself profiles dropouts, identifies the major risk factors associated with the decision to leave school, and suggests prevention strategies that begin in the early elementary grades and continue through high school. Both school-based and other intervention strategies for dropouts are discussed. Brief references to model programs are interspersed throughout the text. However, an advisor to the report cautions that the recommended practices are better understood as promising rather than proven. The report's various policy recommendations express the themes that dropout programs must:

- respond to adolescents' distinct and individual needs
- respond to the many social and economic problems that afflict poor and minority youngsters
- address the crisis of competency that immobilizes many at-risk youth.

The report appeals for a comprehensive, integrated approach to dropout prevention. This approach would incorporate ongoing collaboration between the public and private sectors to provide individualized education, remediation, social services, skill development, and employment for at-risk youth.

Recommendations:

Recommendations for dropout prevention and intervention during the school years include:

- Provide mentorship and intensive, sustained counseling for troubled youngsters.
- Integrate comprehensive health and support systems for pregnancy prevention and services for teenaged mothers.
- Utilize concentrated remediation with individualized instruction and competency-based curricula.

- Promote effective school-business collaboration, providing access to the mainstream economy.
- Provide financial and emotional incentives for students to stay in school.
- Establish full-time, year-round schools and enriched summer programs.
- Facilitate parent involvement in educational and discipline matters.
- Require school-based management and accountability based on accurate attendance and dropout information.
- Identify appropriate resources and accountability measures for local school systems and states.

15 **Massachusetts Advocacy Center and The Center for Early Adolescence. (1988). Before It's Too Late: Dropout Prevention in the Middle Grades. Carrboro, NC: Author.**

Target Population: Vulnerable youngsters, ages 11 through 15.

Summary

This monograph draws from research on early school leaving, middle level education, school reform, and adolescent development to explore how schools can strengthen their holding power for dropout-prone youngsters ages 11 through 15. The monograph introduces its description of the middle school features and practices that successfully deter dropouts, with sections on why dropouts leave school and how middle schools are currently performing. The overriding theme is that good schools themselves are the most compelling reason for students to resist dropping out. Schools deemed successful encourage personal interactions through team teaching and small school units, provide a diverse curriculum with an interdisciplinary focus and connections to student lives, use flexible scheduling, and systematize teacher-based guidance.

The authors argue that all segments of the school community must be involved in efforts to increase individual schools' holding power. School district administrators, board members, and state officials must bolster these efforts with political, symbolic, and substantive acts of their own. One critical step for district-level decisionmakers is to review and revise districtwide policies that are developmentally and educationally hazardous and that contribute to dropping out.

The authors suggest staging the reform of middle school education over more than five years. An initial stage of review, assessment, and planning should take up to one year. An intermediate stage of implementing initial plans and planning and implementing structural, curricular, and instructional reforms should last from two to five years. A final stage of establishing evaluation and change as an ongoing process is viewed as a long-range task.

Recommendations

The report summarizes promising approaches to dropout prevention as found in the literature:

- Utilize academic and remedial approaches that are developmentally responsive, such as accelerated learning, summer programs, cooperative learning, and cross-age tutoring.

- Include experiential activities, such as career exploration.
- Provide counseling and social services in collaboration with other agencies to support students in crisis, as well as in normal development.
- Offer alternative education in separate settings or schools-within-schools that adhere to principles for successful schools.
- Improve schools overall to strengthen the learning environment for all students and adults -- through the features described above.

The authors present seven basic principles to guide dropout prevention efforts in the middle grades:

- Focus primarily on changing school practices and policies that put students at risk.
- Focus on broadening and diversifying opportunities in the educational mainstream so that students with a variety of learning styles, paces, and needs can experience success.
- Develop programs on a school-by-school basis with the involvement of teachers, parents, students, administrative staff, and community workers at all schools.
- Take into account the normal developmental needs of young adolescents.
- Acknowledge the broad cultural diversity and richness of the student population.
- Include parents in meaningful roles.
- Collaborate actively with community-based agencies to provide services for students at risk in middle school and to expand programs offered to all students.

16. **MDC, Inc. (1988). America's Shame, America's Hope: Twelve Million Youth at Risk. Chapel Hill, NC: Author.**

Target Population: At-risk youth.

Summary

Produced for the Charles Stewart Mott Foundation, this report examines how at-risk youth fared in the education reform movement of the 1980s. The report is based on a discussion by a distinguished panel of experts in youth training and education. Their discussion was informed by a review of the federal role in education reform and a 1987-88 survey of actions states took during the 1980s. The results of this inquiry are reported in various forms. These include examples of programs by program type, narratives of state actions in 14 states, a continuum describing the phases of state policy and program development, and recommendations tied to 13 findings.

The report concludes that there is no comprehensive federal policy for at-risk youth, despite public warnings from many quarters. States also lack overarching policy. State actions have been piecemeal, and inadequately funded and evaluated. Most of the report's recommendations are directed to state policymakers.

Recommendations

Recommendations directed to state policymakers include:

- Establish a standing commission on at-risk youth to recommend a concerted program of state action.
- Establish a single cabinet-level agency or office to implement and coordinate the commission's recommendations.
- Conduct a public awareness campaign to inform the public of the needs of at-risk youth and to educate school personnel and others about available programs and models.
- Pass comprehensive legislation establishing state policy for meeting the needs of at-risk youth and increasing their graduation rates.
- Restructure schools via local district action.
- Reform the fiscal structure to assure equity between richer and poorer school districts.

17. **Miller, S. M., Nicolau, S., Orr, M. T., Valdivieso, R., and Walker, G. (1988). Too Late to Patch: Reconsidering Second-chance Opportunities for Hispanic and Other Dropouts. Washington, D.C.: Hispanic Policy Development Project.**

Target Population: Hispanic and other youth, 16 to 24.

Summary

This report explores the problems that currently prevent young Hispanics from gaining employment in the economic mainstream. Essentially, many Hispanic youth lack the skills that available jobs require. They also lack access to appropriate training. Even those who have acquired basic skills find they can only get low-level, dead-end jobs. In part, the report is based on a survey of programs funded by the Job Training Partnership Act (JTPA) in 30 major Hispanic markets. The report examines gaps in service and support provided by JTPA, one of very few sources of training for out-of-school, unskilled youth. An appendix presents the study results.

Overall, the report concludes that existing arrangements fail to serve the estimated 1.8 million Hispanics and significant numbers of other at-risk American youth. The writers believe that good programs can benefit at-risk Hispanic youth, and that developing these programs is both manageable and affordable. Although they recommend collaboration among government, schools, business, labor, and social services, they also stress that collaboration alone is not enough. Collaborating parties also need to discard old, individual systems and create new ones.

Recommendations

The report describes "supply-side options" to increase the employability of Hispanic youth. These include the following recommendations that relate specifically to education at the high school level.

- Incorporate proposed federal changes in JTPA. This would enable service to at-risk youth in school between ages 14 and 21. Programs should include:

  -- instruction in enriched basic skills and tutoring during the school year; instruction in life skills and work experience in the summer

  -- counseling and mentoring

  -- training in pre-employment and socialization skills.

- Follow students for two years after they leave school. The state board of education should operate a centralized data bank that tracks the needs of individuals and available services.

- Use multiple program approaches to reach recent dropouts. Such programs should link education and job training, acknowledge these youths' need for cash and short-term rewards, and inculcate hope for the future.

- Outreach intensively to long-term dropouts. This should include parent education for young mothers through their children's schools.

- Provide alternative schools for returning dropouts. These schools should offer students counseling and promote the staff's personal support for students. Vocational education programs can function as acceptable alternatives only if they provide up-to-date technical training and include job placement.

- Link education and work. The workplace should offer education through apprenticeship programs, computer-assisted instruction, or job-related instruction in basic skills.

- Evaluate programs over time. Reliable evaluations are needed to assess the effectiveness of new and continuing programs.

18. **National Association for the Education of Young Children. (1987). Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8. Washington, DC: Author.**

Target Population: Birth through age 8.

Summary

This document is the work of a national commission of early childhood professionals. It presents the National Association for the Education of Young Children's (NAEYC) official position statement on developmentally appropriate practices in early childhood programs serving children from birth through age 8. Guidelines generated from research and practice provide specific suggestions about the application of developmentally appropriate practices in four areas: curriculum, adult-child interactions, relations between the home and program, and evaluation. Specific descriptions of appropriate, as well as, inappropriate practices are suggested for each age group (infants, toddlers, three-, four-, and five-year-olds, and primary grades). The document is designed for teachers, administrators, parents, policymakers, and others involved with programs serving young children in schools, centers, and homes. The document concludes with a discussion of major policy implications and recommendations.

Recommendations

The following are non-age-specific summaries of the guidelines proposed in this document and are designed to provide an overview of developmentally appropriate practices.

- Curriculum should be:
  - comprehensive and integrative, addressing physical emotional, social, and cognitive developmental needs
  - age-appropriate and individual-appropriate
  - conducive to creative and active exploration, as well as intensive involvement and interaction with adults, other children, and materials
  - relevant to the lives of young children and based upon learning activities and materials that are concrete and real
  - responsive to a wide range of developmental interests and abilities
  - stimulating, challenging, and engaging

- -- multicultural and non-stereotyping
- -- balanced between rest and active movement.

- Adult-child interaction should:
  - -- respond quickly and directly to children's' needs
  - -- provide varied opportunities for communication
  - -- facilitate children's' successful completion of tasks by providing support, physical proximity, and encouragement
  - -- be attuned to children exhibiting stress and provide comfort appropriately
  - -- facilitate the development of self-esteem
  - -- facilitate the development of self-control
  - -- exercise responsibility and adequate supervision over children.

- Relations between the home and program should encourage:
  - -- parents to observe and participate in their children's development, and establish and maintain frequent contacts teachers and families
  - -- teachers and parents to exchange information and insights regularly
  - -- teachers, parents, agencies, programs, and consultants who may have educational responsibility for children at different times to share developmental information about them as they pass from one level or program to another.

- Developmental evaluation of children should:
  - -- use diverse information, particularly observations by teachers and parents
  - -- identify children who have special needs and/or are at risk and plan appropriate curriculum for them
  - -- secure a developmentally appropriate placement in public schools for every child of legal entry age.

In order to implement these guidelines, NAEYC recommends that policymakers at the state and local levels support college-level specialized preparation in early childhood/child development, supervision for teachers who lack experience with younger age groups, and appropriate adult-child ratios.

19. **National Association of Secondary School Principals. (1985). An Agenda for Excellence at the Middle Level. Reston, VA: Author.**

Target Population: Middle school children.

Summary

This statement by the National Association of Secondary School Principal's (NASSP) Council on Middle Level Education examines 12 dimensions of schooling necessary for excellence at the middle level. The statement's central themes include:

- organizing schooling around children's needs
- preparing teachers to work with middle-school-age children
- creating focused and rewarding environments both for children and adults
- connecting middle schools to elementary and high schools, as well as to the community.

Recommendations

The council presented recommendations in the areas of:

- Articulate and disseminate a set of core values to guide individual and institutional policies and practices. These should include respect for diversity, commitment to learning and intellectual activity, and individual responsibility for personal behavior and the welfare of the school community.
- Promote a school climate that supports excellence and achievement. For example, reward academic performance, focus teacher attention and evaluation on students' abilities and difficulties, and create a caring and supportive atmosphere for all students.
- Foster attributes and behaviors which better prepare students to succeed in school and adjust to adult life. For example, this could be achieved through student advisement programs and opportunities for students to exercise responsibility and to explore their aptitudes, interests, and special talents.
- Define curriculum broadly so as not to inhibit teachers from exercising their professional judgment. Curriculum should be organized to allow students to connect the materials and skills learned in different classes. Curriculum should challenge each student realistically and be

developmentally appropriate. Curriculum at the middle level should teach higher order thinking and social skills.

- Use a variety of instructional approaches; pace activities to accommodate different students; plan cooperative rather than competitive learning activities; extend interactions between teacher and students; adapt material from textbooks and other sources.

- Organize the school to maximize teacher and student control over the quality of the learning environment and minimize the effects of large size. Include parents in making important decisions about goals, budget priorities, and school climate.

- Educate students to use technology competently and thoughtfully. Consensually develop plans for the use of technology and its integration into the regular curriculum.

- Require special preparation and certification for teachers and take measures to encourage good teachers to remain in the profession.

- Create a transition panel of teachers and parents to integrate elementary, middle, and high school programs.

- Support principals in leadership, e.g., provide strong preparation programs; authorize principals to control their own budgets, staffing, and physical plant; and assign assistant principals for each group of 300 students.

- Develop good relations with local communities and news media. Adjust school practices to family schedules.

- Equip all school personnel to use a developmentally appropriate approach.

20. **National Association of State Boards of Education. (1988). Right from the Start: The Report of NASBE Task Force on Early Childhood Education. Washington, DC: Author.**

Target Population: All children ages 4 through 8.

Summary

The report of the National Association of State Boards of Education (NASBE) Task Force on Early Childhood Education provides a new policy agenda to promote the development of all young children ages four through eight. The task force brought together state and local school officials, early childhood education experts, and state policymakers. They were briefed by leading experts; reviewed position statements and papers on key issues; conducted regional hearings; and listened to state legislators, principals, superintendents, teachers, child care center directors, teacher trainers, and parents.

The task force claims that the reforms that followed the publication of **A Nation At Risk** (1983) present generic analyses and prescriptions, while the needs of children ages four to eight deserve a specific focus and approach. The report suggests strategies for developing a new vision for early childhood education that combines a restructured approach to schooling for this age group with a call for new partnerships among schools, parents, and other early childhood programs to serve young children and their families.

Recommendations

The following are the two key recommendations and their program components.

- Establish early childhood units in elementary schools to serve children ages four to eight and use these units as a focal point for enhanced services to preschool children and their parents. Program components include:

  -- developmentally appropriate curriculum

  -- improved assessment

  -- responsiveness to cultural and linguistic diversity

  -- partnerships with parents

  -- training and support for staff and administrators.

- Build partnerships between public schools and other early childhood programs in three key areas:

  -- expanded and improved child care services

  -- improved staff quality for early childhood programs

  -- comprehensive services to children and families through collaborative relationships among schools and the various community agencies.

A final recommendation urges state policymakers to support and promote the above recommendations by using all the resources available to them.

21. **National Black Child Development Institute, Inc. (1987). Safeguards: Guidelines for Establishing Programs for Four-Year-Olds in the Public Schools. Washington, DC: Author.**

Target Population: Four-year-old for at-risk black children.

Summary

The National Black Child Development Institute, Inc. (NBCDI) has prepared this brochure to set forth 10 safeguards or suggestions to ensure that early education programs in the public schools create a learning environment for black children that is productive, effective, and long lasting in positive outcomes.

Recommendations

The ten safeguards are listed below.

- Public school-based programs for black, preschool-age children should incorporate effective parent education programs.
- Public school-based early childhood programs should involve parents in the decisions about curriculum and policy.
- The staff of early childhood education programs should include teachers who come from the community served by the program and who are racially and ethnically representative of the children served.
- Teachers in public school-based programs should be required to have specific training in preschool education and/or ongoing inservice training provided by qualified staff.
- Curriculum for preschool-age children in the public schools should be culturally sensitive and appropriate to children's age and level of development.
- Public schools that house programs for very young children should meet the same health and safety standards that apply to independent preschools and center-based child care programs.
- Public school-based early childhood programs should participate in federal and state programs which guarantee adequate nutrition to children.

- Administrators of public school-based programs for preschoolers should ensure that children entering the programs have access to appropriate health care.

- In assessing children of preschool age, the administrators of public school-based early childhood programs should not limit their assessment to, nor base their program planning solely on, standardized tests.

- Public school-based early childhood programs should be subjected to a regular, external review of community members and early childhood development experts.

22. **National Black Child Development Institute, Inc. (1985). Child Care in the Public Schools: Incubator for Inequality? Washington, DC: Author.**

Target Population: Black preschool students.

Summary

National Black Child Development Institute (NBCDI) was established in 1970 to improve the quality of life for black children and youth. A national, nonprofit, charitable, and educational organization, NBCDI focuses on the issues of health, education, child welfare, and child care. This report examines what the NBCDI believes are the potentially grave consequences, particularly for black children, of the trend toward lodging preschool day care in urban public schools.

Recommendations

The report is intended to stimulate discussion and debate, thus it poses the following questions.

- Are existing public school-based programs serving the black family adequately fostering black children's growth and development?
- Can public school-based early childhood programs be molded to meet black children's needs?
- Can public school-based child care models be developed that will not maintain the discriminatory tradition of our public schools?
- Can the momentum toward public school-based child care be slowed long enough to allow a much needed and long overdue analysis of the record and the implications of continuing this experiment?

The report urges that analysis begin and recommends that Congress, child care advocates, black elected officials, educators, parents, and community leaders explore these issues.

23. **National Foundation for the Improvement of Education. (1986). A Blueprint for Success: Operation Rescue. Washington, D.C.: Author.**

Target Population: School-age children.

Summary

This document presents seven principles deemed essential for planning and implementing a successful dropout prevention program. The principles -- all stressing the need for collaboration and visionary leadership -- were distilled by the National Foundation for the Improvement of Education from testimony by former dropouts, parents, local and state school personnel, representatives of various government agencies, business leaders, and others. Under the auspices of National Education Association (NEA) affiliates in Bridgeport (CT), Denver (CO), Los Angeles (CA), and Louisville (KY), these witnesses described widely varying dropout prevention programs, barriers to success and strategies to overcome them, and lessons from experience that might assist in the development of new programs. The monograph includes brief descriptions of the 19 programs about which witnesses provided testimony. Operation Rescue, NEA's grants program to stimulate collaboration for dropout prevention efforts in individual schools, also is described.

Recommendations:

The report's principles for planning dropout prevention programs are:

- Clearly articulated vision is needed. This requires committed, creative leadership that enables belief in the impossible, the taking of risks, the chancing of failure, and the unrelenting persistence to begin again and keep trying with different approaches until success is achieved.

- Successful dropout prevention programs value individuals -- children and adults -- and relationships. This involves teachers' cultivation of one-on-one relationships with students, knowledge of and respect for students' culture and background, linkages between home and school, and the school and community as caring and supportive entities.

- Collaboration among all segments of the school and community is required to provide comprehensive services to the total person. But collaboration also requires special qualities in the parties involved, as well as thorough preparation and strategic thinking.

- Student-centered education is needed. Components include interventions in the early years; various approaches to identifying at-risk students; encouragement of individual development; personalized

programs, curricula, instruction, and support services; and attention to students' transitions between levels, programs, or schools.

- School-site management is needed. While the classroom is the focal point for effective dropout prevention programs, support from the school is needed. This support depends on participatory decisionmaking, local building management; and possible restructuring of school finances, organization, and administration.

- Training must involve all the people in the school and community who relate to students at risk. They need training to enhance their skills for designing effective student programs, as well as for working effectively with each other.

- A sense of ownership over their dropout prevention program will empower adults and students. This ownership is created when values and skills are matched with needs and services.

24. **National Governors' Association. (1989). America in Transition: The International Frontier – Report of the Task Force on Children. Washington, DC: Author.**

Target Population: Prenatal through high school (with emphasis on children up to age 5 and on young adolescents).

Summary

This report is one of six in progress under the leadership of the National Governors' Association (NGA) on topics considered to be critical to this country's well being (e.g., emerging international markets, global understanding, competitiveness in our domestic markets). A task force of governors is studying each of these topics, listening to experts in the field, and preparing a document that presents their recommendations. This document addresses the issue of how to ensure that this country has a healthy and vital human resource base. The solution the governors offer is based upon the development of a system of child care and education that is both comprehensive and preventive. They see states as being especially well positioned to raise the prevention banner and, in partnership with families, provider groups, and concerned citizens, to develop a long-term, comprehensive approach to child development. However, the report notes that states first will have to overcome two major problems. One is the disjointed, piecemeal, and crisis-oriented nature of many state services to children. The other is the lack of a coherent national policy on children and families, which the task force claims has resulted in a convoluted and restrictive funding stream for children's programs.

Recommendations

Regarding the state role, the report recommends that high priority actions:

- Focus attention and government resources on high priority prevention programs.
- Improve efficiency of current prevention programs through better planning, coordination, and consolidation.

The report recommends that there are several key strategic points in every child's life at which prevention is especially critical. The recommendations are organized around these strategic times and urge additional state roles:

- Reduce infant mortality and health problems associated with low birth-weight babies through a program of comprehensive and timely prenatal care.

- Reduce the incidence of chronic illnesses and preventable disabilities through an expanded program of well-child care.

- Reduce adolescent health problems through primary health care and health education.

- Reduce delinquency, substance abuse, truancy, and related problems through community activities designed to engage teenagers constructively.

The recommendations suggest specific programmatic interventions that are especially relevant to the concerns of early childhood educators. These include:

- Establish a system to track high-risk infants from birth, so that case managers can effectively steer them into appropriate services.

- Provide accessible and affordable child care.

- Require the expansion of half-day preschool programs that are coordinated with child care programs for a percentage of "at-risk" four-year-olds.

- Encourage the use of a parent/outside service coordinator to establish and maintain an outreach program for parents, identify and facilitate the use of support services, and serve as liaison and advocate for at-risk students and their families.

The recommendations suggest specific programmatic interventions that are especially relevant to the concerns of middle and high school educators. These include:

- Reorganize large middle schools into smaller, more manageable units, so that young people can gain independence while remaining in a more personal environment.

- Create health clinics for young adults that are school-based or located near schools.

- Encourage schools to create youth service programs as part of the curricula.

NGA is currently seeking funds to conduct a three-year follow-up to the task force report. It would include the provision of technical assistance to states and the compilation of an annual statistical report on children's well-being.

25. **National Governors' Association. (1987 and 1988). Results in Education. Washington, D.C.: Author.**

Target Population: Four-year-olds through high school who are at-risk, troubled, or not meeting basic standards.

Summary

In 1986, the National Governors' Association (NGA) issued **Time for Results: The Governors' 1991 Report on Education** (see #26 below) which describes a five-year plan for improving education. That plan issued challenges in seven areas that included teaching, school leadership and management, parental involvement, at-risk children and youth, technology, school facilities, and colleges and universities. The present reports, **Results in Education** (1987 and 1988), are the first two progress reports on NGA's five-year plan. They both highlight state initiatives in each of the above-listed areas. The 1988 report also describes state efforts to track the results of earlier education reforms and summarizes what has been learned. The data for these publications were gathered from governors' offices, as well as from surveys of state education policies conducted by NGA and other organizations.

Both reports stress how states differ in socioeconomic and fiscal conditions, economic systems, educational governance structures, traditions of state or local control, and historic patterns of investment in education. These differences are reflected in the focus, timing, and breadth of each state's initiatives.

Recommendations

The reports recommend approaches that specifically address issues related to the young child. These include:

- Establish interagency coordination of services to young children at-risk.
- Provide early childhood education, especially for at-risk or handicapped children from birth to four years old.
- Create systems that identify the academic progress of at-risk students.

The reports also urge state policymakers to consider the following recommendations for middle and high school at-risk youth:

- Provide remediation or alternative educational environments.

- Restructure to serve the growing diversity of students and to expand the role of schools in preventing students from dropping out.
- Develop suitable approaches and tools for evaluating programs.
- Encourage interagency coordination of services.
- Provide awareness campaigns.
- Develop adequate funding.
- Support teacher training.

26. **National Governors' Association Center for Policy Research and Analysis. (1986). Time for Results: The Governors' 1991 Report on Education. Washington, DC: Author.**

Target Population: Preschool through 12th grade.

Summary

In 1985, the nation's governors, considered seven "tough" questions about education that they felt needed to be answered for schools to improve. They formed themselves into task forces to address their questions about teaching, leadership and management, parent involvement and choice, technology, school facilities, college quality, and readiness. The Task Force on Readiness addressed the question pertaining to at-risk children: "Aren't there ways to help poor children with weak preparation succeed in school?" This task force was composed of eight governors (South Carolina, Pennsylvania, Indiana, Kentucky, Ohio, Vermont, Virgin Islands, and Washington). The task force held three hearings around the country in 1985-86, during which school officials, teachers, program directors, advocates, and scholars testified. The report describes the extent of the problems addressed and includes each task force's recommendations for action.

Recommendations

Initiatives to help at-risk young children become ready for school and experience early success include the following:

- Provide in-home assistance for first-time, low income parents of high-risk infants.
- Develop outreach initiatives using community and religious organizations to assist and support young children with absentee parent(s) or guardian(s) as their sole source of nurturance.
- Provide high quality early childhood programs for all four-year- old, at-risk children and, where feasible, three-year-olds.
- Provide all parents of preschool children with information on successful parenting practices.
- Stress continued improvement of developmentally appropriate programs in existing day care centers for preschool children through center accreditation, teacher credentialing, and staff development.

- Develop state and local structures through which various public and private agencies can work together to provide appropriate programs for young children and new parents.

- Develop incentives or direct state aid to encourage reduced class size in kindergarten and lower grades.

To reduce the risk of failure for at-risk students, states must work to assure that at-risk children and youth meet the new educational standards from school entry through graduation. Possible initiatives include:

- Provide extra help in the basic skills for students who have major deficiencies.

- Develop incentives, technical assistance, and training for teachers and principals to employ effective school and classroom procedures.

- Assure a challenging curriculum for all children.

- Provide for accurate assessment of student performance.

- Reward schools for making progress in educating all children.

- Establish home/school programs so parents can assist teachers.

- Establish alternative programs to work with potential and actual high school dropouts.

- Establish a mechanism for state intervention with school districts when progress is not being made with low-achieving students.

27. **The OERI Urban Superintendents' Network. (1987). Dealing with dropouts: The Urban Superintendents' Call to Action. Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education.**

Target Population: Preschool through grade 12.

Summary

Under the sponsorship of the U.S. Department of Education's Office of Educational Research and Improvement (OERI), the Urban Superintendents Network, representing 32 major urban public school districts, meet two or three times annually with OERI staff, education researchers, and practitioners to discuss issues of importance to them. In 1986-87, the dropout problem headed their list of concerns. The superintendents felt that the experience and knowledge they had exchanged with each other over the years on this problem also might benefit others -- educators, policymakers, business leaders, parents, and citizens -- currently grappling with the dropout problem. The booklet they produced is divided into two parts. Part 1 discusses the dropout problem and presents the superintendents' action plan for a joint effort to keep more students in school until graduation. Part 2 describes six strategies they believe hold promise for keeping at-risk students in school. Those six strategies are:

- Intervene early.
- Create a positive school climate.
- Set high expectations.
- Select and develop strong teachers.
- Provide a broad range of instructional programs.
- Initiate collaborative efforts.

Each of the strategies is defined and examples of promising practices support each recommendation.

Recommendations

Specific recommendations pertaining to the early intervention strategy are listed below:

- The earlier one intervenes, preferably in the preschool years and with the involvement of parents, the greater the dividends.

- Early intervention can have long-term effects on disadvantaged children by decreasing their need for special programs and lowering delinquency, pregnancy, and dropout rates.

- Educators must monitor the academic and social progress of children carefully and early, and provide special help before years of academic failure have eroded youngsters' self-esteem and left them behind in school.

- Helping children develop competence and confidence in their ability to learn is a good way to instill a desire to learn and to prepare for a lifetime of learning.

Recommendations relating to the middle learning years include the following:

- Intervene early and monitor academic and social progress to assure that students receive suitable special services throughout their years in school.

- Create a positive school climate. Contributing elements include strong principals, stable staff, schoolwide goals, high expectations, a challenging and appropriate curriculum, recognition of academic success, sufficient time for students to learn, small and orderly classes, personal attention to students, consistent application of discipline policies, parent involvement, and shared decisionmaking.

- Set high expectations; enforce appropriate standards for attendance, academic achievement, and student behavior.

- Select and develop strong teachers by insisting on top-quality preparation programs, sound hiring procedures, regular inservice, autonomy and adequate resources for teachers, and replacement of unable teachers.

- Provide a broad range of instructional programs. Programs should attack the dropout problem on several fronts simultaneously. Examples of program types include magnet and alternative schools, programs for non-English speakers, compensatory education, and work experience.

- Forge partnerships and foster collaboration among various groups. For example, establish school, community, and business partnerships; provide comprehensive support services to pregnant teens, including school-based child care; and embark on media campaigns.

Recommendations pertaining to the high school years include the following strategies:

- Intervene early; students' needs for services can be detected through consistent monitoring of students' academic and social progress.

- Create a positive school climate, contributing elements include strong principals, stable staff, schoolwide goals, high expectations, a challenging and appropriate curriculum, recognition of academic success, sufficient time for students to learn, small and orderly classes, personal attention to students, consistent application of discipline policies, parent involvement, and shared decisionmaking.

- Set high expectations through enforcement of appropriate standards for attendance, academic achievement, and student behavior.

- Select and develop strong teachers through insistence on top-quality preparation programs, use of sound hiring procedures, provision of regular inservice, autonomy and adequate resources for teachers, and replacement of unable teachers.

- Provide a broad range of instructional programs; use of multiple programs will attack the dropout problem on several fronts simultaneously. Such programs may include: magnet and alternative schools, programs for non-English speakers, compensatory education, and work experience.

- Forge partnerships and foster collaboration among various groups. Examples include establishing school, community, and business partnerships; providing comprehensive support services to pregnant teens and teenage parents, including school-based child care; and conduct media campaigns.

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APPENDIX B

RESEARCH DATABASES OF SELECTED FEDERAL AGENCIES

(251)

SUMMARY OF FEDERAL SCIENTIFIC AND TECHNICAL INFORMATION ACTIVITIES

Name of Federal Agency	AGRI.	COMM.	DOD	EDUC.	ENERGY	HIH	NSF	NASA
Federal R&D $ Rec'd., Expressed as percentage of total Fed. R&D	2%	.7%	63%	.2%	9%	11%	3%	9%
Percentage of federally-funded R&D done in-house	68%	81%	25%	5.5%	5%	17%	10%	35%
Does most of the agency's federally-funded R&D result in an agency publication or a privately published commercial report or article?	?, but most likely agency pubs. predominate	?, but most likely agency pubs. predominate	Privately published and contractor reports predominate	Privately published reports probably predominate	Privately published reports probably predominate	Privately published reports predominate	Privately published reports predominate	?, probably privately published reports predominate
Primary mechanism for publishing STI: GPO, the agency, or private vendors? private	Agency/ agency	?, probably private	Agency/ agency	Private/ private	Agency/	Private	Private agency	Private/
Primary mechanism to distribute hardcopy agency publications								
Classified		NTIS	DTIC		DOE's OSTI	GPO, NTIS,		NASA's STI
Non-Classified	?, Agency	NTIS	NTIS	Agency & GPO	NTIS & GPO	and Agency	NSF & NTIS	BTIS & GPO
Name of the agency's major information agency	?	NTIS	DOC	?	DOE's OSTI & EDIS	NLM	None	STI
Name of the agency's major publications database	AGRICOLA & USDA Online	NTIS	DROLS & TRAC	ERIC & RIE		MEDLARS & MEDLINE	None	RECON & STAR
Is most of the agency's STI cited in an agency database?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the agency's database include private STI?	Yes	Non-NTIS	Yes	Yes	Yes	Yes	Yes	Yes

Legend: NTIS=National Technical Information Service
DTIC=Defense Technical Information Center
OSTI=Office of Scientific and Technical Information
STI=Scientific and Technical Information
GPO=Government Printing Office
DOC=Defense Documentation Center
EDIS=Energy Data Information System
NLM=National Library of Medicine
AGRICOLA=U.S. Department of Agriculture Bibliographic Reference Database
USDA Online=U.S. Department of Agriculture Information Service
DROLS=Defense Research, Development, Test, and Evaluation Online System
TRAC=Technical Report Awareness Center
ERIC=Educational Resources Information Center
RIE=Resources in Education
ITIS=Integrated Technical Information System
MEDLARS=Medical Literature Analysis and Retrieval System
MEDLINE=MEDLARS Online
RECON=NASA Computerized Online, Interactive Retrieval System
STAR=Scientific and Technical Aerospace Report

Source: U.S. Congress, Office of Technology Assessment, Summary of "Informating the Nation," Federal Information Dissemination in an Electronic Age (Washington: GPO, OTA-CIT-396, 1988), and "Federal Scientific and Technical Information in an Electronic Age: Opportunities and Challenges," OTA Staff Paper, October 1989.

(253)

APPENDIX C

"TILLING THE SOIL: HOW EDUCATION DISSEMINATION CAN BENEFIT FROM EXPERIENCES OF THE U.S. DEPARTMENT OF AGRICULTURE"

(255)

TILLING FERTILE SOIL: HOW EDUCATION DISSEMINATION CAN BENEFIT FROM EXPERIENCES OF THE U.S. DEPARTMENT OF AGRICULTURE

By
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*Dr. Klein wrote this paper in her private capacity. The ideas expressed are the author's and no official support by her employer, the U.S. Department of Education, is intended or should be inferred. It is based on her earlier papers "Issues to Consider in Adapting the Agricultural Extension Model to Education" and "Preliminary Suggestions on What to Replicate and What to Avoid as We Consider Applying Aspects of the USDA Cooperative Extension Service to Education" prepared for the staff of the House of Representatives Subcommittee on Select Education.

TILLING FERTILE SOIL: HOW EDUCATION DISSEMINATION CAN BENEFIT FROM EXPERIENCES OF THE U.S. DEPARTMENT OF AGRICULTURE

In planning for a more effective role for the Office of Educational Research and Improvement (OERI) in education dissemination, the staff of the Subcommittee on Select Education asked the author to help them understand how educators could do a better job of benefitting from the most visible federally supported dissemination system, the Cooperative Extension Service (CES), in the U.S. Department of Agriculture (USDA). Additional activities were designed to learn from dissemination efforts of other federal agencies, from countries with decentralized education systems, and from dissemination activities within categorical programs in the U.S. Department of Education (ED) such as those of the Office of Special Education and Rehabilitation Services (OSERS).[1]

Nature of the Fertile Soil in Agriculture

As well documented by Rogers (1988), Warner and Christenson (1984) and others, the Agricultural Extension System or the Cooperative Extension Service has a history that precedes the Civil War. It started because there was a great deal of research-based information on how to improve agriculture that wasn't being used. It has evolved substantially as the information to be shared became more complex and as the needs of its constituency changed. For example, now more effort is given to community development, and food and nutrition services than to agriculture since only 2% in the nation are farmers. The CES doesn't view itself as a strict research transfer system, but sees itself much more as an education and technical assistance exchange system that deals with policy mandates and other information as well as research. Warner and Christenson (1984) note that CES does not see itself as a service agency or as an enforcer of government regulations. They see the CES informal education as helping people develop their own potential. The 1981 GAO report states, "Whereas programs once focused almost exclusively on the practical application of new research results, program topics now include cultural, recreational and leisure-time activities" (page 10).

Nature of the Education Soil

As described by Klein and Gwaltney (1991 a & 1991 b) the current education dissemination system in the U.S. is active, but fragmented. Like the U.S.D.A system various components

carry out the full range of dissemination functions: spread, choice, exchange and implementation.[2]

Although the education dissemination soil may be seen as a bit rocky compared to the fertile soil in agriculture, some transplants from the agricultural extension system have already been implemented. Examples include the Regional Utilization Specialists funded by the National Institute on Disability and Rehabilitation Research in OSERS, the State Capacity Building Program in the National Institute of Education (now OERI) and the State Facilitators in the National Diffusion Network in OERI (Backer, 1986; Coulson, 1983; Crandall, 1989; Haughey, 1981; Hutchins, 1989; & Liberti, 1991). Other major efforts such as Hutchins (1977) plan for NIE to replicate the county extension agent in education were proposed.

In considering how to redesign their dissemination system based on insights from the agricultural system, educators need to be aware of the unique conditions of their soil such as the greater challenges in differentiating the "wheat from the chaff" or the treasures fromthe pebbles and the need to serve organizations as well as individuals. They should consider replicating according to the principles that worked well in agricultural dissemination, avoiding replicating the things that didn't work well in agriculture, and preserving or adding principles that are of particular value in education. The rest of this paper describes each of the following principles and suggests implications for replication by OERI.

Discoveries from Tilling the Soil in Agriculture: Principles to Consider Replicating in Education Dissemination

1. Secure adequate funding.
2. Develop a coherent stable but flexible system.
3. Organize the work to benefit from the expertise and commitment of specialists.
4. Use generalists with excellent process skills.
5. Use appropriate technology as it is developed.
6. Be responsive to the needs of all the users and beneficiaries. Use strategies that involve: networking; teaching, training and technical assistance; volunteers; and outreach to youth.

Discoveries from Tilling the Soil in Agriculture: Principles to Avoid Replicating Weaknesses of the Cooperative Extension Service in Education Dissemination

7. Attend to equity concerns.
8. Attend to quality control of what is disseminated.
9. Help users benefit from all quality resources, no matter who supported their development.
10. Don't create a monopoly that excludes appropriate organizations from participating in the dissemination system.

Discoveries from Education and other Dissemination Experiences: Principles to Add to the Improvement of Education Dissemination

11. Create a dynamic treasure chest[3] of high quality education resources.
12. Provide incentives for users to participate fully in the education dissemination system.

Discoveries from Tilling the Soil in Agriculture: Principles to Consider Replicating in Education Dissemination

1. Secure Adequate Funding from the Federal Government and Other Sources.

Agricultural dissemination like dissemination in the Department of Defense (DOD), National Institutes of Health (NIH), National Aeronautics and Space Administration (NASA) is well funded compared to education dissemination (Ault, 1991; Backer, 1991; Darling-Hammond, 1991; Owens, 1991). There is substantial USDA investment in research and dissemination ($1.29 billion in FY 1989 increased to $1.54 billion in FY 1991). In FY 1991 there was $399 million for extension (CES) and $17 million for the National Agricultural Library and related university library support, $673 million for the Agricultural Research Service and $454 million for the Cooperative State Research Service. CES increases to over $1.26 billion with cooperative support from states and locals. Thus, the total investment in CES and related National Agricultural Library support is about equal to the USDA investment in R&D. Rogers (1991) observed that this dissemination to R&D ratio is much lower in education and all other fields.

In the CES most specialists and county agents receive only partial federal support for their salaries and activities. The major exception is in the Black land-grant universities where the full costs are generally paid by USDA. Also, the federal experts are USDA civil servants. For the state specialists, part of their salary and job responsibilities are for research or teaching, not specifically related to their CES specialist roles. On the other hand, the county agents are supported in part by their constituents primarily though state and local government budgets. They do not usually charge their individual constituents for services or materials. Besides providing monetary and facility support, clients are well-represented in state and local CES advisory boards.

In education there are many programs that rely on federal and local cost-sharing for both generalist and specialist work. Experts or specialists in universities and other institutions provide valuable advisory and other services often only with reimbursement for travel and expenses because they are committed to the topic and see participation as an important way to increase their professional development and prestige in the field.

Some OERI dissemination programs also receive cooperative support. For example, many ERIC Clearinghouses receive substantial support from their university or association host institution and school districts and states may contract with Regional Labs for specific services.

Education needs similar levels of federal and cooperative support, but is unlikely to obtain as much state and local support for dissemination or research as the Cooperative Extension System enjoys.

Implications for OERI Replication to Secure Adequate Funding

If OERI is given the authority to provide leadership in creating and supporting a national education dissemination system to help improve education, sufficient long-term federal funding must be provided for a sustained period. An initial 20 year federal commitment would avoid political battles and make it more feasible for dissemination priorities and staff to be selected and advanced on merit alone.

Since there is no one best type of institution (such as CES with its historically designated land-grant colleges) to serve as a base for specialists or district education agents, OERI should consider using a competitive procedure to fund both. Additional stability may be achieved through five year contracts with the likelihood of continuation based on adequate performance and local contributions to the work.

As the national education dissemination system evolves and more organizations find that it is worthwhile to participate, they are more likely to provide cooperative support through actual funding or "in-kind" contributions. For example it is quite likely that foundations will leverage their resources to support both specialist and general dissemination functions.

2. Develop a Coherent Stable, But Flexible System.

Dissemination activities in agriculture are well-integrated with federally sponsored R&D. Besides being administered by the same part of USDA as the federal research, CES is well connected to the National Agricultural Library. Although the CES structure has evolved as conditions in the country change, its budget and mission have been quite stable.

Rogers (1978) points out that a coherent system with structural linkages among the research utilization components, is a main attribute of the agricultural extension model. People in CES as well as its clients understand its components and the ways the different organizations such as agricultural experiment stations, land-grant universities, and county offices work together. Rogers also indicated that new elements of CES, such as specialists, were developed to maintain a "spannable" social distance across sub-components.

Implications for OERI Replication of a Coherent National Education Dissemination System

Education already funds many ongoing research and dissemination components that could be altered to form a coherent system. (See Klein and Gwaltney, 1991 a & 1991 b.) A coherent dissemination-driven R&D system is needed in education and Rogers and many others agree that it makes little sense for educators to adapt parts of the CES such as the county agents without providing them with an adequate infrastructure. In fact it is quite likely that previous

education adaptations of components of the CES have failed in good part because they were under funded and because they were not connected to a meaningful, stable support structure (Backer, 1986; Liberti 1991; Rogers, 1991). Like agriculture, a coherent education dissemination system would provide for all four dissemination functions: spread, choice or options, exchange, and implementation or knowledge use. It would also involve content specialists and dissemination generalists and the different government bureaucracies from the federal government to local school districts. But unlike agriculture, it would have a well organized dynamic resource base or "treasure chest" to help users select and use the best "seeds" for their unique environments. (This dynamic treasure chest concept will be explained during the discussion of principle 11.)

3. Organize the Work to Benefit from the Expertise and Commitment of Specialists.

One of the key ways that the CES has evolved is that it is becoming more dependent upon the important work of specialists and experts at the federal, regional, state and county levels. The CES has two main types of employees, subject or content specialists who are generally university researchers and professors in the state land grant institutions, and generalist agricultural or other types of agents. The specialists are expected to be familiar with the R&D in their areas and synthesize and interpret it for the agents and others. In larger county offices, it is common for the agents to provide technical assistance in specific areas such as apple growing.

Education already has both types of specialist and generalist personnel, but unlike CES they rarely work together in an integrated system. The National Diffusion Network (NDN) state facilitators and many Regional Educational Laboratory (Lab) staff are like generalist agents, and technical assistance providers in ED programs such as bilingual education are like the special focus agents. Education researchers in universities and R&D Centers and association staff are most likely to be specialists.

While it would be great to have specialists in most topics in all states as in CES, in education it would be more feasible to have specialists selected from a national pool, with as much attention to geographical, organizational, and sub-topic area distribution as possible. CES is also going in this national direction with increased use of

regional specialists and extensive facilitation roles of USDA experts.

Implications for OERI Replication of Thematic Specialist Areas

Building on the successful use of specialists in the CES, OERI might decrease the fragmentation of its current R&D and dissemination efforts by organizing a great deal of its dissemination driven R&D system by specialist areas ranging from early childhood education, to teacher education, to learning theories or subject content areas such as reading and science. Such a thematic organization should also help OERI facilitate long term progress and develop constituencies in these areas. It should also increase the possibilities for political neutrality since the experts would rely heavily on an in depth knowledge of their field and empirical evidence to guide their decisions.

OERI could also view the concentrations on specialist areas in a developmental way. Thus, as they increase in importance, some specialist areas could become comprehensive Institutes such the proposed Institute for the Education of At-Risk Students described in the Subcommittee report (1989) and by Representative Owens (1991).

In organizing the work in thematic specialist areas OERI could fund **specialists**, establish **specialist advisory panels**, support **specialist networks** and give appropriate facilitation responsibilities to **federal experts** in each of the specialist areas.

Similar to CES, one responsibility of the partially OERI-supported specialists[4] would be to participate in a "working" **specialist advisory panel**. One person from each panel would serve as chair and, as requested, meet with an overarching OERI policy advisory council and other groups as needed. Participants in each specialist advisory panel would include 25 OERI-supported specialists and up to ten additional representatives of consumers, developers, associations, foundations, and government agencies. Each specialist advisory panel would develop a programmatic dissemination driven agenda for RDD&E in their area and make recommendations to Congress for more extensive federal support of implementation activities, if needed.

Initially, 20-30 specialist advisory panels would be created[9] and there would be a process for the over-arching OERI policy advisory panel and Congress to approve additional specialist areas or modify their coverage. A voluntary specialist network would complement the work of each specialist panel and facilitate the involvement of all those interested in the work of the panel.

The specialists in education, like those in agriculture, would be RDD&E experts in their domains. In addition to their advisory panel responsibilities they would have the following two major roles:

- They would be responsible for knowing about and improving the treasure chest contents and use in their respective areas. In doing so, they would focus on R&D to fill gaps in resources and address goals. They also would help with the four dissemination functions of spread, choice, exchange, and implementation in their specialty area. This may involve synthesizing research and evaluation information, designing and conducting comparative evaluations and identifying gaps in treasure chest resources.

- Like their peers in CES, the education specialists would not receive full-time federal funding for their routine specialist responsibilities. Each would have other complementary RDD&E responsibilities and salaries from their home institution. These responsibilities may also include inservice or preservice teaching/training in their specialty area.

Foundations and associations or other agencies also may fund work related to various components of the system and they would be welcome participants in the specialist networks. With a clearer structure to facilitate national progress in the identification and use of education treasures, many professionals in the selected thematic areas and the organizations for which they work, are likely to contribute services and advice.

While it would be nice to have specialists in most topics in all states as in CES, in education it would be more feasible to select specialists from a national pool of experts, with as much attention to geographical, organizational, and sub-topic area distribution as possible. CES is

also going in this direction with increased reliance on regional specialists.

While most CES personnel are outside USDA, USDA staff provide important generalist and specialist expertise. In addition to the state specialists, there are federal experts in each of the specialist areas on the USDA staff. OERI staff also would have mainly generalist or specialist responsibilities, although some may have combined assignments.

Federal experts in OERI's Office of Research (OR) probably would take the lead in facilitating the work of the specialists and the specialist networks. They also would coordinate with other federal and private activities in the area and with international groups. The most senior federal expert would serve as executive director of the Specialist Advisory Panel which would select its own chair and officers on a rotating basis. At least three federal experts would be assigned to each specialist area. Some of these experts may be Education Department staff outside the Office of Research and even outside OERI.

As with the national education specialists, the federal experts would direct much of their attention to the contents of the dynamic treasure chest in their area. They also would be a key liaison to related specialist advisory groups -- ie, the math expert would help coordinate activities with the science panel. If there are significant gaps that the government wants to fill by activities at R&D Centers, R&D Labs or with FIRST or other programs, the federal expert also would play a role in directing this OERI work and in advising on work to be done by other federal agencies. The OERI experts also would be involved in OERI procurements related to their area of expertise.

4. Use Generalists with Excellent Process Skills.

County Extension Agents

One of the most well known aspects of the CES is its county agents. As of 1991 there were over 10,000 of them and many counties, including those in inner city areas have multiple agents. Most counties have separate agents for agriculture, home economics, 4-H youth programs and community development. The agents generally work very long days, evenings and weekends. Their salary range is from $16,000 for beginners up to $80,000 for experienced agents. The

agents typically have degrees in adult education. They spend about half of their time responding to questions and the rest operating programs, arranging meetings, managing volunteers, visiting constituents and writing their monthly reports. Warner and Christenson (1984) describe extension agents work as relying heavily upon individual and small group methods that emphasize decision making at the individual level. Demonstrations are still utilized, though home visits, telephone calls, and office visits are the predominant individual methods utilized today. The Extension agent also has available a large array of printed publications that serve to supplement personal communications. Extension staff make extensive use of such group methods as workshops, leader training meetings, and subject matter meetings. However, in dealing with concerns of a public nature, there has been increased focus on decisions at the community level. In recent times, Extension has made increased use of mass media communication methods such as radio, TV, and newspapers.

In addition to being proficient in important technical assistance process skills, there is often a great deal of specialization among extension agents, thus a parallel for education may make sense.

Other Process Experts

The USDA and the states also support other dissemination and evaluation generalists such as administrators, educators of county agents, librarians and experts in evaluability assessment. USDA staff work on CES policy and evaluations and they operate the National Agricultural Library.

Implications for OERI Replication of Extension Agents and Process Experts

Replicate the Extension Agent Network

In redesigning the national education dissemination system, OERI should consider replicating many aspects of the CES county agents. It is useful to have a generalist district education agent office to be responsive to the broad needs of the constituents, but as in the CES county offices, it would also be good to have well established links with specialists and to coordinate activities with individuals who are best equipped to provide advice on resources and technical assistance in specific areas such as federal and state categorical programs in special, vocational and bilingual education.

Like the county extension agent, the responsibilities of the District Education Agent (DEA) would evolve as the dissemination infrastructure improves and as local needs change. Owens (1991) and Peters (1991) describe a variety of DEA duties and responsibilities such as maintaining an education information resource for the general public as well as education practitioners, helping arrange technical assistance, assisting in obtaining supplementary funding for educational improvement and identifying gaps to guide new research.

Like the county extension agent network, the DEA's should have regular opportunities to meet with each other and learn about the resources and management of the dynamic treasure chest as well as their responsibilities in helping their constituents contribute to and use the treasure chest. They also will need to learn more about the other technical assistance providers (such as Regional Educational Labs, Chapter I Technical Assistance Centers, NDN, state departments of education) and funding sources available to their constituents. As in CES, some of these network and training opportunities could include formal college credit courses for the district education agents.

While the CES land-grant university-based state specialist/county agent networks would not be replicated in education they provide some useful ideas for the "Learning Grant Institutions" proposed by Owens (1991) and Peters (1991). Specialists and district education agents should be encouraged to attend each other's meetings, receive the same mailings, and have access to the same computer bulletin boards and database retrieval systems. The DEA's also would know about specialists and the services they would be willing to provide in their region. The specialists could call on the education agents as they wanted to collect user feedback and evaluations.

As with participants in each specialist network, education agents who are not supported by OERI would be free to participate in the education agents' network and receive mailings, attend meetings, participate in computer links, etc. if they pay their own costs. The new federally supported district education agents would receive their full salary and network-related travel expenses from OERI, but their facilities and additional support would be supplied by local institutions. Sometimes, the federal or state government would pay for additional services for economically disadvantaged districts. Like the specialists, the district education agents could obtain additional funds for their

offices and direct related dissemination system work. State Education Agencies and organizations of private schools also could support their district education agents. These agents would be free to join the DEA network and receive communications from OERI system managers and specialists and be invited to participate in public dissemination system meetings. Many educators with current dissemination responsibilities congruent with those proposed for the DEAs could join the DEA network. This would facilitate linkages among the federally supported DEAs, specialists, and with other dissemination programs.

Replicate Process Generalists in OERI

If OERI is to play a leadership role in creating and supporting a national education dissemination system composed of specialists, district education agents and a more active management of the nation's dynamic treasure chest of education resources and solutions, it should consider developing a matrix type organization that would focus on specialist or thematic areas and on **refining and applying R&D processes and methodologies** such as collecting statistics and improving R&D and dissemination approaches that would be used by each specialist area. They would also provide extensive attention to evaluation or quality control and standardization of important aspects of the system such as database management. As Representative Major Owens (1991, p.10) points out "The refined OERI process should standardize methods and procedures. Panels, peer reviews, evaluations, validations, etc. should always have similar criteria and meanings within OERI. They should also be consistent with similar concepts in the larger scientific community."

Some of the ways that OERI could provide increased support for improving these methodologies and processes would include assigning such responsibilities to:

NCES staff (Some may specialize on statistics on minority populations, gender differences and similarities, early childhood education, or post-secondary education, etc.)

Library programs staff (Public and other library programs supported by OERI could be provided with incentives to encourage them to provide access to components of the education treasure chest available through technology.)

Education networks staff (This would include managers of the Regional Educational Laboratories and other Congressionally mandated networks managed by OERI such as the District Education Agents. NDN state facilitators may be switched to become State Education Extension Agent Facilitators to help coordinate connections to the entire Treasure Chest.)

Treasure chest management staff (This would include current activities of the staff providing responsive information services such as the Education Information Branch, the ED library and ERIC. It would also include more proactive services such as the electronic bulletin boards, publications and outreach programs as well as dissemination activities such as the Program Effectiveness Panel and NDN Developer Demonstrators. New activities would also be added.)

To increase the likelihood of cooperation with dissemination and other methodological improvement efforts supported outside of OERI and to benefit from additional expertise and public scrutiny, each of these components could follow the precedent set by NCES and maintain its own advisory group. These process focused advisory groups could follow the pattern of the specialist advisory panels and report to the overarching OERI Policy Advisory Board and Congress.

5. Use Appropriate Technology as It Is Developed.

CES has a long history of helping its constituents use appropriate agriculture technology and in recent years has been making substantial progress in using technology for dissemination. The CES is using computers and video technology. However, with some exceptions, such as the management reporting system based on the five year state plans, and access to AGRICOLA and other information databases, the computer systems are not highly standardized.

The Department of Education (ED) is doing a great deal with computers and technology for research, dissemination, and evaluation functions as well as in providing student instruction. But, except for ERIC and regular library services, little is being done by ED to standardize and assume leadership in the use of technology for dissemination

purposes. Currently, even the Project Management Information Systems (PMIS) in different parts of ED are not fully functional or integrated. As Patton (1988, p. 489) points out, the use of technology such as mass media and computers may make the extension system less dependent on one-to-one interpersonal contact than it had been. But, education dissemination system redesigners must be careful not to abuse technology. For example, a video conference may not substitute for direct interpersonal interactions needed to perform some exchange and implementation functions.

Implications for OERI Replication of Appropriate Uses of Technology

As Peters (1990) astutely points out "technology has changed the way we think of educational dissemination. We must come to terms with the power of technology to transform the relationship between the producer and consumer of educational research, and the distance between theory and practice." In applying technology to the redesign of our nation's education dissemination system, it should be possible to adapt good technological applications from USDA and other agencies.

The application of technology also has substantial implications for how services are organized and shared. For example, as Representative Owens (1991, p.28) points out, the use of technology and the media makes it unnecessary for the District Education Agents to have the "face to face" contact of the early county agents in agriculture. Similarly, technology makes it more sensible to organize the work of the specialist areas nationally rather than by states or regions of the country. Technology also may make it possible for all types of organizations to have desk-top access to the dynamic education treasure chest and extensive referral services. In addition to supporting District Education Agents and some toll free telephone numbers, the government might consider subsidizing the access of those most in need and making these services available at-cost to others.

6. Be Responsive to the Needs of all the Users and Beneficiaries.

In conceptualizing how the federal government can enhance its leadership role in helping specialists identify and promote the use of promising and effective solutions to their education challenges, it is important to remember that users will not automatically seek educational resources or

strategies which are most likely to benefit them even if it becomes fairly easy to learn what they are. The CES was faced with similar challenges in an area where the potential impact of an innovation was easier to demonstrate. CES developed various effective approaches to help its constituents make wise use of R&D. Some of the principles inherent in these approaches may be replicated in education and in fact many of them involve education. They include exchanges and networks, the use of teaching, training and technical assistance, the use of volunteers and outreach to youth.

Networking

One of the most effective features of the CES has been its multiple network activities. This helped the informal exchange of information and joint planning and resource sharing of CES participants. CES helped support three major types of networks: (1) The specialists networks; (2) the county agents networks; and (3) the state specialist/agent networks through the state university system. An important feature of these networks is face-to-face meetings where the network members get to know and trust each other.

The Department of Education also supports specialist categorical program networks and OERI has a Networks Division which contains the Regional Educational Labs, LEAD for educational administrators and others. Yet, OERI staff participation in network activity has been severely limited due to lack of travel funds. For LEAD, no federal funds were provided to help the state LEAD projects or federal staff meet together, but this functionwas considered so essential that they sought and attained Kraft Foundation support for this networking.

Implications for OERI Replication of Networks

In education, it would make sense to replicate the first two types of CES networks. One model for the specialist network would be the "invisible college" which NIE initiated to help teacher education researchers. In the current case, the OERI-funded extension system specialists and members of the specialist advisory panel would form the core of the specialist network, but others could participate by providing information on their expertise, getting on the mailing list, attending public meetings organized by the specialist panels, etc. (To the extent possible, specialist meetings would be held with relevant association meetings and build on existing

networks. Where possible both R&D experts and practitioners would be encouraged to participate in these specialist networks. Sometimes this is facilitated by associations such as the Council for Exceptional Children which is comprised of both types of members (Birman, 1991).

While the CES land-grant university-based state specialist/county agent network would not be replicated in education, specialists and district education agents should be encouraged to attend each other's meetings, receive the same mailings, and have access to the same computer bulletin boards and database retrieval systems. As discussed in Klein and Gwaltney's paper on a framework for a national education dissemination system (1991 b), network links among the various bureaucratic levels and between the special focus and general dissemination focus organizations need to be identified and supported.

Teaching, Training and Technical Assistance

These education and implementation strategies are used by both the specialists and the county agents. In fact, many specialists are also university professors and many county agents have degrees in adult education. But, in the CES most of the training and teaching is informal and interactive rather than lecture style. This increases responsiveness to student or client needs and questions. Much of the technical assistance is provided economically in a group setting. As a rule neither CES specialists or agents or their counterparts in education will be expected to provide direct services (such as spraying crops) to clients except to help them develop their capacity to do something such as using computer farm management software. Recently CES has been using evaluability assessment as a way to involve and empower users in their own planning and implementation activities.

Implications for OERI Replication of Teaching, Training and Technical Assistance

Although teaching, training, and technical assistance would remain important strategies for the education dissemination system, as currently envisioned the education specialists and the District Education Agents would have somewhat different responsibilities than the CES specialists and agents. The education specialists would give most attention to building and refining the components of the Treasure Chest in their areas of expertise. In doing so they would be

available for consultation by the DEA's or others involved in research, evaluation or implementation. The DEA's would focus their attention on helping people use the whole dissemination system and the treasure chest, rather than providing assistance in particular topic areas. Instead, Regional Educational Laboratories, Technical Assistance Centers, State and District level curriculum specialists, developers and publishers of effective programs, products, practices and policies and university and preservice educators would provide assistance in choice and implementation.

Unlike CES, District Education Agents would focus most of their attention on intermediary users (educators) and their organizations, rather than the ultimate users (the students). However, like the CES, they would also focus on learning from their users and on influencing other important stakeholders such as parents. In education this user feedback would be incorporated into the treasure chest and into advice on new R&D. It is also likely that often, where additional resources are needed to use a treasure, most implementation resources will come from other ED categorical "service" programs such as Chapter I or from the state or local education agency or the private sector. As Louis (1991), Klein and Gwaltney (1991 b), Weiss (1991) and others point out these education users need incentives and skills to help them select and use the most appropriate education resources. This is particularly tricky when major school based changes involving multiple resources are envisioned.

Use of Volunteers

One of the unique aspects of the extension system is the organized formal and informal ways it uses volunteers. For example, groups like Master Gardeners take much of the question answering and training burden from the county agent. Also, many farmers participate in field studies and demonstrations without receiving additional compensation from the CES.

In education, specialists, particularly in equity areas, do much volunteer work related to professional development. University staff are also encouraged to perform community services. Although local district educators do not do much volunteer work related to dissemination they frequently provide uncompensated work on R&D-related projects and are well-known for providing special help to students. Recently, business and communities have been contributing to educational improvement efforts.

Implications for OERI in the Replication of Volunteer Involvement

Volunteer involvement would be built into both the specialist and the district agent activities. The redesigned national education dissemination system could even develop system-wide incentives and structures to encourage volunteers. Since most specialists care about the resources in their field and want to stay abreast of recent developments and research needs, it is likely that many will want to participate in the specialist network and even contribute to work on the treasure chest. For example, volunteers may prepare syntheses of research or serve on panels to design comparative evaluations of products, programs, practices, and policies.

One of the district education agent's primary responsibilities would be to train others to use and participate in all aspects of the treasure chest. They also could seek volunteers to assist them in question answering and training. Some of these volunteers may be students who do this as part of an education internship, teachers or administrators who receive release time for this involvement, and parents or retired persons who want to help in education and learn more about educational resources. Besides providing help, volunteers would learn more about the contents and use of the treasure chest so that they would be likely to become consistent users when their volunteer work ends. Arrangements also could be made to enlist the help of volunteers such as curriculum specialists who also could train others interested in their topic areas in the use of the treasure chest and in local implementation challenges.

Outreach to Youth

One of the most effective CES strategies to influence stubborn farmers to try new innovations was by involving their children. CES used 4-H agents and programs to teach and train youth, who in turn, would encourage their parents to adopt new effective farming practices.

Education does not do much to involve youths in educational R&D use, although some programs to recruit high school students to become teachers particularly in urban areas have recently emerged. Sometimes students are represented on school boards, but usually they have no role in the selection of school practices (aside from social events) except as in-

direct consumers whose final achievement scores may be used in the evaluations of the products and programs in the treasure chest.

Implications for OERI in the Replication of Youth Outreach Strategies

Older students, in particular, could be involved in operating and knowing about the treasure chest. Their knowledge of treasure chest contents (or for younger children, that of their parents) may put pressure on the staff to use alternative products or programs that may be better for the students. Having access to information on what works should empower the students as well as their teachers. Thus, district education agents may involve students in their advisory boards, as recipients of information on educational resources and as volunteers in contributing to and operating the treasure chest, perhaps as a community service option. Like medical patients who put pressure on their doctors to select the most current treatments, students and their parents could put pressure on schools to select and use the most effective educational programs, products, practices, and policies.

Discoveries from Tilling the Soil in Agriculture: Principles to Avoid Replicating Weaknesses of the Cooperative Extension Service in Education Dissemination

There are many reasons why not all aspects of agriculture's Cooperative Extension Service should be replicated in the redesign of a national education dissemination system. For example, some of the historical precedents such as exclusive use of Land Grant Universities continue to exclude involvement of community colleges which have missions that are very congruent with CES activities. Also, the nature of the education resources and needs differ from the R&D and assistance needs of the CES. And finally, unlike the CES, the soil in education is full of many worthwhile but fragmented and poorly articulated dissemination components that need to be incorporated into a redesigned coherent structure. Thus, educators should adhere to the following principles to avoid replicating weaknesses in the CES.

7. Attend to Equity Concerns.

While the CES serves needy populations through the nutrition services and some outreach to small farmers, its assistance has often resulted in the larger farmers'

prosperity and the smaller farmers' ruin. Similarly, due to its historical origins, many CES services are still segregated according to race and gender. Historically there was separate funding for the black and white land-grant universities and agricultural agents worked with farmers, while home economics agents served farmers' wives. Also, current federal policies to serve under-represented populations are difficult to implement because the under-represented populations are less likely to be information seekers.

One of the primary goals of OERI is to advance equal educational opportunity. ED has traditionally focused attention on equity issues primarily through separately funded programs such as those of OSERS, the Office of Bilingual Education and Minority Languages Affairs (OBEMLA), the Office of Indian Education, etc. Like CES many of these programs are quite segregated.

Implications for Educational Equity

The education dissemination system could be redesigned to serve equity populations and address equity issues as it develops components of the dynamic treasure chest. Priority may be given to federal support of specialist panels on equity topics and District Education Agents working with the most academically and economically disadvantaged populations may receive the most federal financial support. The proposed selection of the 50 poorest Congressional districts for the first DEA's is responsive to this concern.

8. Attend to Quality Control of What is Disseminated.

The CES doesn't have systematic procedures except some peer academic review of researcher and specialist work to assure quality of information provided by the specialists or the county agents.

In education where there is an abundance of materials and approaches, educators need help in sorting and identifying those that are most likely to help them in their situation. This also may become increasingly important for CES, particularly as they become involved in more topics outside agriculture (such as family mental health) where it is more difficult to show results.

Implications for Quality Control of the Treasure Chest

The quality control aspects of treasure chest are vitally important. Similarly, the continued involvement of the users in providing feedback on the effectiveness and other dimensions of quality of programs, products, practices, and policies is a key aspect of the "exchange" function of dissemination. Evidence of effectiveness as well as equity considerations also should guide the allocation of federal resources for implementation. Education can lead the way in applying evaluation to help consumers learn which of the many treasures are best for them.

9. Help Users Benefit from all Quality Resources, No Matter Who Supported their Development.

CES specialists and agents don't help consumers acquire and use research and development from all sources, just from those funded by the government. However, they do advise on the relative merits of proprietary R&D or commercial products, if asked. Also, the CES does not have an active national approach to disseminate important R&D findings such as the "hypodermic needle" approach used by other agencies.

Education needs to give more attention to the systematic processing and interpretation of information from all worthy sources than does CES. While ED may not have the rights to share proprietary R&D or support its implementation, it should ensure that the system helps users identify proprietary as well as government-funded research, programs, and products which will help them. The education dissemination system leaders also will need to bring resources from other federal programs such as the CES Youth Information Center and National Science Foundation projects into all appropriate components of the treasure chest.

Implications for Education Dissemination Strategies

While all education treasure chest components should concentrate on sharing information from federal and state sources, they also should encourage the collection of high quality R&D supported by others. Usually, it would be advantageous for these other sources to make their products available through the education treasure chest. Specialist

panels may select particularly important R&D for the "hypodermic needle" or "social marketing" approaches to educational change. Klein (1989) suggested ways that educators could improve the synthesis and interpretation of the "raw" R&D information. Also, much attention needs to given to improved implementation of those exemplary products, programs, practices and policies which already transform or interpret valuable "raw" R&D information. This may involve developing licensing and copyright incentives as well as improved links to federal operational support programs and university and school district based pre and inservice professional development programs.

10. Don't Create a Monopoly that Excludes Appropriate Organizations from Participating in the Dissemination System.

The CES is funded an managed through the specified land-grant universities. While this has many advantages such as stability in funding, and good connections with important research universities, it also presents difficulties. For example, it eliminates the active participation of other learning institutions such as community colleges and sometimes the university bureaucracy and geographical distance hinders relationships with the county agents. Sometimes it also makes it difficult for libraries and other federal and state agencies to participate. There is also a continual tension between universities' interests in becoming research centers of excellence and providing community services.

Education lacks one logical set of "learning or dissemination institutions" that should be given a monopoly on the management of the specialists and district education agents. Instead, many public and private universities and colleges, government agencies, and R&D organizations are involved in providing dissemination and training to the elementary and secondary, vocational, post-secondary and adult education communities.

Implications for Non-Monopolistic Federal Support of Education Extension System Participants

Separate long-term procurements should be designed to:

- Augment functions of the treasure chest components based on designs and needs identified by the OERI process managers.

- Fund specialists. (Although their home-base learning or R&D institutions should guarantee some support, the specialists should be selected because of their individual commitment and expertise, rather than the type of organization where they are employed the other 50-75% of their time.)

- Fund district education agents and perhaps state education agents instead of NDN facilitators. (The district education agents funded by the government should meet criteria based on their personal expertise in dissemination and securing local funds and on the needs and commitment of local education agencies or R&D dissemination organizations.)

Also, legislation and procurements in the rest of the ED should be written to mandate appropriate coordination with the redesigned coherent national education dissemination system.

Discoveries from Education and other Dissemination Experiences: Principles to Add to the Improvement of Education Dissemination

11. Create a Dynamic Treasure Chest of High Quality Education Resources.

In education and many other areas one of the most commonly asked questions is what are the best resources or what works to do whatever the user feels is needed. People would like to benefit from others' experiences, but they often don't take the time to seek answers to such questions from sources other than their trusted colleagues (Hood, 1989). Part of the explanation for this may be that their likelihood of easily obtaining the information they need on the relative merits of various resources is slim. However, if this evaluative information exists, the increased use of technology should make it feasible for more users to obtain much of this information from "one stop shopping". Since little credible evaluative information exists, specialists in the various substantive areas need to work with their colleagues and users in their substantive areas to create, revise, and share this information. An overarching conceptual organizer for this work would be a dynamic treasure chest or base of high quality resources. This treasure chest work would build on current education dissemination activities such as clearinghouses, Regional Educational Laboratories,

R&D Centers and Technical Assistance Programs.

The dynamic treasure chest could be organized into the following five types of components:

Component 1. Up-to-date General Education Information.
Federal grants availability and Project Management Information System (PMIS), current events, organizations, experts, advisory panel activities, government policies, education statistics, etc. (Most items are of short term interest.)

Component 2. High Quality R&D Information
High quality general research and curriculum information (ERIC contents plus as much book and AV and computer software as possible as in an expanded OERI Library and Technology Resources Center.) (Most items are of long term interest and would be archived.)

Component 3. Identification, Synthesis and Interpretations of Worthy Research and Evaluation Findings.
Consensus-based or generalizable research findings/principles/syntheses and exemplary knowledge interpretations based on these. (This information would be prepared for various types of users ranging from researchers to students -- where it may be included in products,programs, practices and policies
It would be updated as needed, spread vigorously, and entered into Component 2.)

Component 4. Promising Programs, Products, Policies and Practices.
Include demonstration models, etc. All must meet appropriate criteria for quality, except for adequate evidence of effectiveness. As decided by specialist panels additional resources would be provided for development and evaluation of the promising items. These items may be derived from practitioner experiences as well as more traditional R&D. (Information on the promising attributes of these items would be updated frequently using formats that facilitate comparison. As evidence on their effectiveness is accepted, they would be included in Component 5.)

Component 5. Effective Programs, Products, Policies and Practices.
In addition to passing a review for effectiveness and high quality, there would be procedures to collect continuous information on how they work in diverse situations and adaptations. (Information on these excellent or exemplary items would be updated frequently using formats that facilitate comparison, spread vigorously, and entered into Component 2. Much of this Component would build on the Program Effectiveness Panel and NDN where items of particular value and utility would receive additional support for social marketing and implementation.)

If educators establish and maintain such a comprehensive, interactive dynamic treasure chest, they also would be developing a useful model for other social science oriented fields such as mental health and many other areas of public policy.

12. Provide Incentives for Users to Participate Fully in the Redesigned Education Dissemination System.

Unlike agriculture and medicine where there are generally visible urgent reasons to try new and better methods to address needs, the incentives to seek and use better products, programs, practices, policies and general research based information to improve education are much weaker. This is true because the causal effects of using these education resources are less clear and because many methods work at least to some degree. The interaction effects between the way the resource is used and with whom are also much more influentialin education where mutual adaptation is common, even if a strict adoption of a product might work better with most users.

Much of the CES in agriculture was focused on influencing the ultimate user and beneficiary, the farmer. However, in education and medicine, the main consumer is usually not the ultimate beneficiary, the patient or student. Instead it is an intermediary such as doctor or teacher. Medicine has found that it can increase the use of effective new knowledge and products by providing information to the ultimate consumer (the patients) with coverage in the public media and well as dissemination to the physicians. Educators are also trying to influence the public (generally the parents and community) rather than the students.

If an effective dynamic treasure chest of education resources is established, educators should remember to involve the ultimate beneficiaries in its use. This would include contributing feedback to the system about what works for them as well as learning what worked for others. As in CES which is becoming more involved in human services than in agriculture, redesigners of the education dissemination system need to use the strategies discussed in principle 6 to be responsive to the needs of all users and beneficiaries, but they also need to develop new ways to help users and beneficiaries participate fully in the national education dissemination system. As described in Klein and Gwaltney (1991 b), many of these activities lead to new roles for dissemination personnel and new dissemination skills for R&D producers and users.

Summary: Planting 12 Principles to Guide the Redesign of the Education Dissemination System in the U.S.A.

As Congress creates new legislation to increase the use of R&D in improving education in the U.S., it can benefit substantially from tilling the fertile soil from historical and current activities of the Cooperative Extension Service of the USDA. But the redesigners must also remember that there are valuable ideas and strategies to transplant from other areas as well. These areas include other federal systems, business and most importantly, dissemination experiences within the current active but fragmented education dissemination system.

Like agriculture, the federal leadership role in redesigning the education dissemination system must focus on integration with R&D and service support activities while encouraging the cooperative participation of all stakeholders. The discussion in this paper of 12 principles to guide Congress in creating the specifications for a dissemination-driven R&D system approach by the Office of Educational Research and Improvement in the U.S. Department of Education is just a start in this challenging task.

[1]Results of these other activities were reported in Chicago, IL on April 5, 1991 at the American Educational Research Association Annual Meeting in a symposium on "The Leadership Role of the U.S. Department of Education in Creating and Supporting a National Education Dissemination System" and in a separate keynote address by Representative Major Owens with responses by Linda Darling-Hammond and Art Wise. The Annual Meeting of the Knowledge Utilization Society on "Knowledge Utilization Programs in the Federal Government" held April 9-11, 1991 in Bethesda, MD provided additional insights on other dissemination models. Many federal agency dissemination efforts are also described by Backer, 1991.

[2]As defined in Klein & Gwaltney (1991 b, p. 4-5):

Spread means the one-way broadcasting or distribution of information to increase awareness.

Choice or dissemination of information on options is intended to help users learn about comparative attributes of alternative resources. This function is often provided in a responsive mode from an information center or library, but disseminators may also perform this function proactively through publications or conferences which describe options.

Exchange is interactive and involves the multi-directional flow of information. This interactive feedback may be formal or informal and occur through site visits, meetings, field testing or technology-assisted communica-

tions.

Implementation or knowledge use includes technical assistance, training, or other activities such as problem solving procedures that are designed to change attitudes or behavior and to institutionalize these changes over time.

No order or sequence is implied by these functions. In fact, typical activities mentioned for each function may fit in multiple categories.

[3]"The dynamic resource base" is a potential alternative name for "Treasure Chest," which was used because it was in the "Preliminary Staff Report." Some have objected to "Treasure Chest" because it connotes a static image and because it sounds too childish. Please share your suggestions on other names.

[4]OERI may pay for 25-50 percent of specialists work hours per year for routine specialist functions. Some specialists may acquire additional OERI support for additional work.

[5]The OERI Authorization and Appropriations legislation could specify these Specialist areas, but consistency is important so each area should be funded for a minimum of five years with anticipated renewals.

[6]As defined in Klein and Gwaltney (1991 b, p.3-4):

Products include self-contained education materials, such as textbooks, computer hardware and software, publications, video and audio tapes.

Instructional or management programs are generally more encompassing and context specific. They often incorporate specific products and practices.

Educational practices are behaviors or instructional management principles used in classrooms or educational settings.

Public policies are specific plans or action aimed at accomplishing certain organizational or system goals.

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